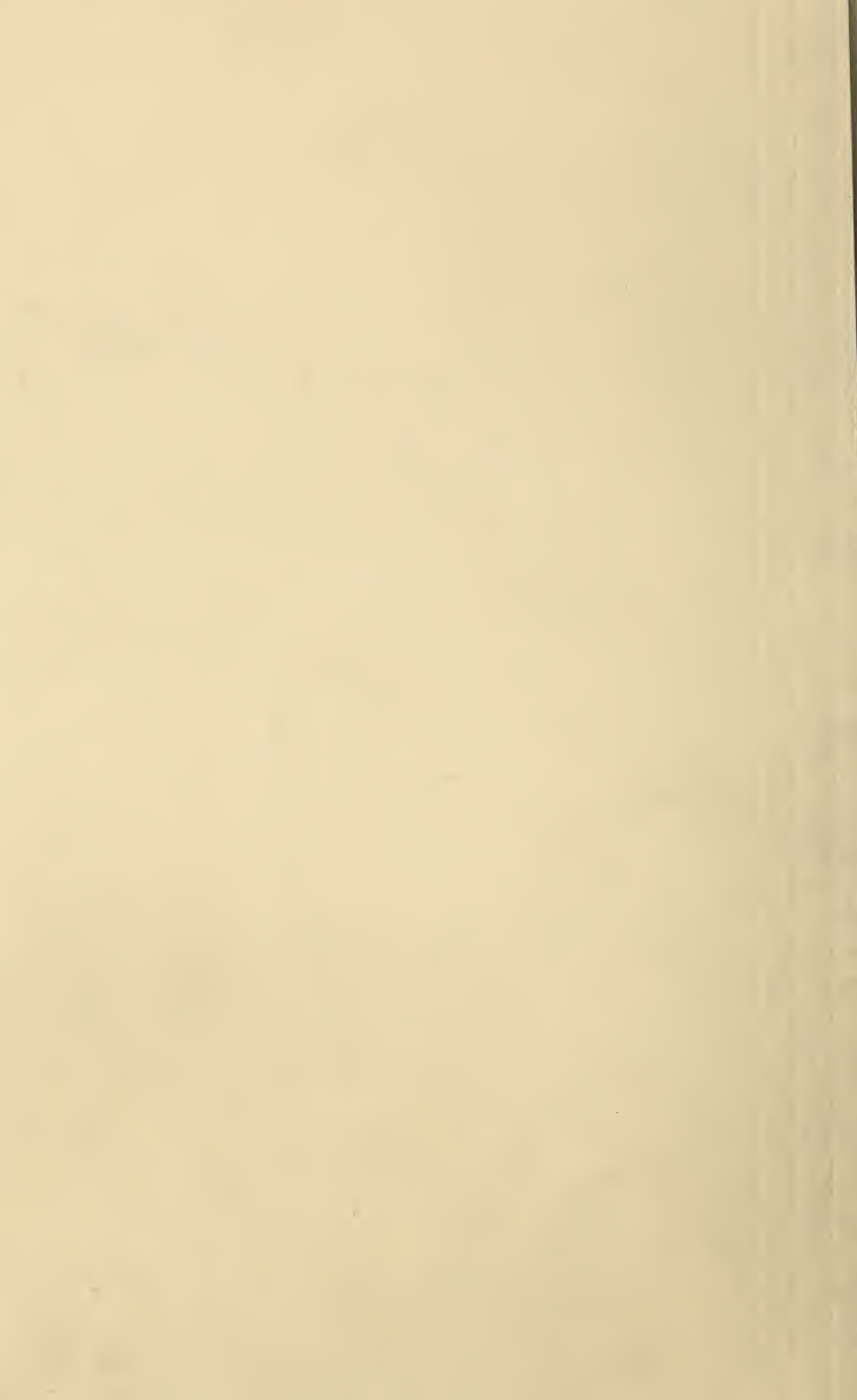


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Gleanings in Bee Culture

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VOL. XLI. NOV. 1, 1913, NO. 21.

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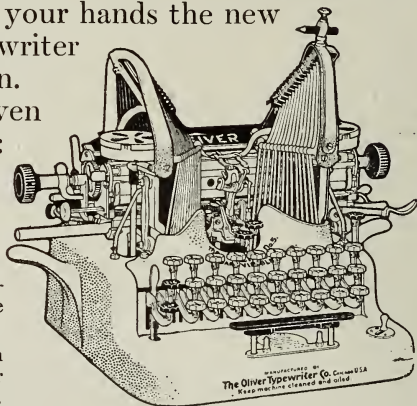
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Gleanings in Bee Culture

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NOVEMBER 1, 1913

NO. 21

Editorial

WATER-BOTTLES AND HARD CANDY FOR MAILING QUEENS.

We are now continuing our experiments in supplying queens by mail by the use of little tin water-bottles. So far the results have been highly satisfactory. We will make no positive predictions at this time; but we believe that the use of water in our mailing-cages will enable us to use a hard dry candy. It will be much more satisfactory than any of the soft candy, for that is liable to be too soft, and run out of the candy-holes and daub the bees.

MOVING BEES BY WAGON WITHOUT CLOSING THE ENTRANCES.

THE conservative Mr. Doolittle, in his regular department in this issue, recommends moving bees by wagon without closing the entrances of the hives, even when the motor is a horse, and he is right. When the entrances are left open there is no danger of suffocation; and even during hot weather bees will not cluster out much if the moving be done toward night or early morning. Of course, when the automobile truck is used there is no danger of bees getting out and causing trouble.

MADAM MAETERLINCK PREACHING THE USE OF HONEY IN COOKING; HONEY-CURED HAMS.

In these columns we have already referred to Madam Maeterlinck, the wife of the great Belgian poet, Maurice Maeterlinck, is an enthusiast in regard to the use of honey in cooking. We have already given one or two of her recipes. A number of her fine recipes are being circulated through many newspapers of the country, together with a writeup on Madam Maeterlinck and her views in regard to honey as a food. These articles are ably written; and as the recipes are all good they can not fail to stimulate the use of honey to a great degree.

As is well known, in olden days honey was used as one of the materials employed in the curing of hams. One of Madam Maeterlinck's recipes mentions this. We give herewith the recipe in full:

To make it, a brine is formed of four pounds of coarse salt and an ounce of saltpeter; two pounds

of honey and two gallons of water. All the ingredients are well blended and poured over the hams, which are permitted to rest in the honied brine for six weeks, when they are found to be marvelously saturated with a flavor that is truly indescribable.

OUR COVER PICTURE.

THE view on the cover for this issue is from a negative originally made by W. Z. Hutchinson. It shows a method of protecting hives by means of a super filled with packing material, and building paper wrapper around the brood-chamber. This is a plan that gives satisfactory results in a locality where the winters are not severe, where the temperature seldom goes down as low as zero, and then for only a few hours.

Better results are secured if another piece of paper is properly wrapped and folded over the cover lapping down over this under piece so as to shed the water. Otherwise the rain will run down the side of the super and thoroughly soak up the hive-body, and keep it wet. Tacking strips of lath along the upper edge of the paper helps to shed the water, and does very well for spring protection; but another piece of paper over the cover lapping down over the brood-chamber is better still. A very wide piece of paper will answer for both if, after being folded down over the cover, it will extend to the bottom-board. Where it is impossible to obtain paper wide enough we advise the use of two pieces, as above mentioned.

THE AUTOMOBILE TRUCK FOR OUT-APIARY WORK.

ON page 775 of this issue will be found a reply to R. V. Cox as to the value of an automobile truck for out-apiary work. We may say in this connection that the machine has not only proved its value in beeyard work, but it has been used to good advantage in delivering honey to the city markets. We have used it in carrying exhibits from fair to fair; in making quick trips over long distances. One day we drove it over one hundred miles.

The great advantage of the automobile truck for the beekeeper of 500 or more colonies is that it will deliver his honey clear up to the door of the consumer or to

the store of the retailer. When honey is shipped by freight to the city markets it then has to be carried by a careless and indifferent truckman to the consignee. We find in some cases that we are able to deliver honey cheaper by automobile than we can by freight. Another thing we are beginning to see is automobile trucks from the city, loaded with freight for our suburban towns—especially those towns that are not reached by railroads. The only thing that seems to be a necessity are hard stone roads. A community that has not gumption enough to have roads that are good the year around ought to be left out in the cold.

WHY IS SWEET CLOVER HAVING SUCH A BOOM IN OKLAHOMA AND KANSAS?

A. I. Root has been inquiring why there seemed to be such a big demand from Oklahoma for our sweet-clover pamphlet. As we made a trip through both Oklahoma and Kansas last winter, perhaps we can answer the question. Kansas especially has been a great corn State. The farmers there seemed to have the impression that they could grow nothing but corn and buffalo grass. In later years they have discovered that alfalfa grows well on low lands next to the little creeks and rivers; but it will not grow on the uplands. They are just beginning to discover in some sections of Oklahoma and Kansas that sweet clover will grow on these same uplands where formerly buffalo grass would be the only thing that seemed to thrive. The result is that the farmers in those States are finding out that sweet clover is going to enable them to make use of their poor lands that heretofore have yielded but scant returns. After these uplands have been inoculated with the bacteria, sweet clover will thrive and yield luxuriantly. Well, these same farmers are turning their stock—sheep and pigs—on these sweet-clover uplands, with the result that stock-raising is beginning to develop to a proportion that is going to mean the emancipation of much of these bad lands that hitherto have been almost useless.

SWARMING NOT CONTROLLED BY RAISING THE HIVE UP ON FOUR BLOCKS; CARNIOLANS IN VETERATE SWARMERS.

Two or three of our correspondents, particularly Mr. Foster in this issue, do not believe it is advisable to place too much dependence on raising a colony up on four blocks to check or control swarming, as shown on pp. 593 and 610, Sept. 1st issue. Probably much will depend on the strain of bees and the supplementary management. We regard Mr. Vernon Burt as one of the

best beekeepers in the country. Any one who will talk with him for a while will be convinced that he is not only on the job, but knows it from start to finish. He has been using this scheme for swarm prevention for the last two years—years when we have had at our own yards some unpleasant experiences in shinning up trees after swarms. We tried the four-block method at our Carniolan apiary, but it apparently had no effect. As a matter of fact, every thing we tried failed; and we came to the conclusion that, when conditions generally are favorable for swarming, the Carniolans will swarm in spite of us. In this locality we do not regard them as satisfactory for the production of comb honey as the ordinary leather-colored Italians. They will breed up earlier, and work earlier and later in the day; but, my, oh my! this very breeding aggravates the swarming problem later on; and when Carniolans start to swarm you may reasonably expect they will not do much else in the way of honey production that season.

THE ADVANCE IN THE PRICE OF HIVE LUMBER; HOW LABOR HAS ADVANCED; COST OF HIVES NEW AND OLD.

In this issue, page 750, Mr. P. C. Chadwick calls attention to the steady advance that has taken place in the price of hive lumber during the past 20 years. What is true in California is more than true in other parts of the United States. A few days ago a subscriber, noticing that the price of bee-supplies was going to advance this year, complained, saying he thought it was unjust and unnecessary. This complainant probably failed to take into account the advance of the cost of living, the cost of labor, and the cost of general commodities during the past six or seven years. Nearly every thing has gone up—so much so that it is a real problem how to make ends meet. The wife of a workingman is obliged to figure much more closely than she did ten years ago, because the wages of her husband, although they may have advanced, are not yet quite up to the relative advance in the cost of living.

If it costs more to build a house now than it did ten years ago, it is reasonable to suppose that it would cost more to build a hive, because to a great extent the same class of labor and material is employed in each. As Mr. Chadwick points out in the article referred to on page 750, the price of second-hand hives to-day ought to be worth nearly the price of new ones. While hives ten or twenty years ago cost less, the natural depreciation during that period nearly balances the appreciation in the value of mate-

rial and labor entering into the newly made goods; or, to put it another way: A house built fifteen or twenty years ago for \$1500 is still worth nearly that amount in spite of the wear and tear and depreciation, because a new house like it can not be built to-day for less than \$2500.

As Grover Cleveland once said, "We are confronted by a condition and not a theory." We may complain about the advance in the price of the cost of living, but the fact remains that the cost of nearly every thing has gone up, and why not bee-hives?

After writing the foregoing, we ran across an item in the Oct. 23d issue of the *Cleveland Plain Dealer* that is very much to the point. Here it is:

TELL HOW COST OF BUILDINGS GROWS: EXPERTS GIVE FIGURES ON CONSTRUCTION AT REALTY BOARD LUNCHEON.

Cost of dwelling construction has increased 15 per cent in the past four years. Cost of building factories and other large structures has risen 17 per cent in the same time. These statements were made to the Real Estate Board at its weekly luncheon yesterday. Arthur P. Cody, real-estate man, explained the increase in the cost of building houses, while Lawrence Slatmyer, associated with his father, Henry Slatmyer, in the contracting business, told of the cost of erecting large structures.

"Carpenters twenty years ago were getting 17½ cents an hour," said Cody. "To-day they are getting 50 cents an hour."

The difference between the increased cost for dwellings and that for larger buildings was attributed by Slatmyer to the fact that a large amount of unskilled labor is employed in excavating for and erection of the latter, and that this labor has had an advance of 20 per cent in wages during the past four years. He pointed out that the average increase for all kinds of construction has been about 5 per cent a year. He declared that a factory building erected four years ago which cost \$62,681 to-day would cost \$73,779.

THE MILLER SMOKE METHOD OF QUICK INTRODUCTION.

WITHIN the last few days we have introduced sixty or more queens into as many colonies by the Miller smoke method. The weather during this time has been hot, cold, chilly, wet, and bright. Three or four colonies, on account of our difficulty in being able to get queens in time, were queenless so long that they had developed laying workers. However, we used the method described by A. C. Miller on page 370 of the current volume, and every queen was successfully introduced, *including the three colonies of laying workers*. It is well known that the ordinary method of introducing fails with laying workers; but the smoke method seems to be a sure thing in season and out of season with all kinds of colonies, whether queenless or not.

Here is the experience of another that is worth recording at this point:

I had a colony of bees that bothered me all summer. Early in June they lost their old queen and

failed in getting another. A cell hatched, but evidently the queen was lost in her virgin flight. I did not discover that they were queenless for more than two weeks; and as soon as I did I tried to introduce a queen by the cage-and-candy method. I tried this and failed. Then I tried to give them mature cells, but they would not accept them. I next gave them two frames of brood; but by this time there were laying workers in the hive, and they would not build cells. About the middle of August I wanted one of my mating boxes that already had a laying queen in it that was clipped. I did not care about this queen, so I thought I would try to introduce her into the hive that I have mentioned, by the smoke method recommended by Mr. Arthur C. Miller, p. 370, June 1. The next day I looked into the hive and found my clipped queen. She had been accepted, and had nearly filled one comb with eggs. At this date, Sept. 10, she has the hive well filled with brood. A. S. KINNEY.

South Hadley, Mass., Sept. 10.

"Why, the other day," said our apiarist, Mr. Marchant, "by error I introduced by the smoke method a queen in a hive where there was already a nice laying queen. Would you believe it? they accepted the introduced queen and killed their nice layer! What do you think about that?"

If this method shall continue to be as successful as it has been with us during the last six months we shall recommend it exclusively, and, what is more, it will be possible for queen-breeders to sell virgin queens. Heretofore the business of selling such queens has been unsatisfactory, in that the recipients were not able to introduce them by the ordinary caging plan. But the Miller method makes a sure thing of it. A virgin can be had for about half the price of a laying queen. It will thus be possible for thousands of beekeepers to avail themselves of choice stock from our best queen-breeders at a very low price, and then have that stock crossed with their own vigorous strain. Truly this will be a great step forward.

THE SMOKE METHOD OF INTRODUCING IN ROBBED-OUT COLONIES.

After dictating the foregoing the following letter came to hand. As it describes a condition where the smoke plan of introducing was put to a severe test, we give it right here:

When I saw the article in *GLEANINGS* by Arthur C. Miller in reference to direct introduction by the smoke plan, page 370, I was very much pleased, and at the same time had my doubts whether it would be a success. Nevertheless I made up my mind to try it. Having found one of my colonies hopelessly queenless, and having tried every thing I could think of to get a queen in without any success I ran a laying queen in on the Miller smoke plan. After I had opened the entrance about an inch the rest of the bees began to rob this hive, so I closed the entrance up tight and left it closed until very near dark, and then opened it about an inch. The next morning the robbers were as bad as ever, so I made up my mind to let them finish it up, which they did; but, remarkable to relate, the bees that belonged to the hive stayed there, and the next day were carrying pollen. I looked in the hive and found them all right, with the queen that I ran in laying finely.

This I consider a success under the most difficult circumstances.

Muncy, Pa., Aug. 23.

W. P. MERRILL.

A GREAT SCHEME FOR WINTERING; MOVING CARLOADS OF BEES FROM THE NORTH TO THE SOUTH DURING WINTER, AND SECURING TWO CROPS OF HONEY AND A HUNDRED PER CENT INCREASE.

FOR some years back we have had a dream of moving bees from the North, just at the approach of winter, to a southern clime, where they can gather a part of their own food, and at the same time build up for increase. We expect to move a carload of bees from Medina to a location which we have bought of Mr. A. B. Marchant on the Apalachicola River, Florida. This yard will be situated remote from any other bees, at a point where it can secure the early ti-ti and (later on) the tupelo in March and April. We plan to put 300 colonies in a car, and with them take about 300 hives in the flat, with necessary frames and foundation, and a power extracting-outfit. We aim to build these 300 single-story colonies into two-story from the ti-ti and other early bloom. In order that they may have plenty of pollen we are selecting our combs having the most of it, and putting them into the hives. Pollen in combs, by the way, is a splendid asset for the bees. We are feeding up only enough to land the bees in Florida in good condition. On arrival we will feed if necessary. If not, we shall expect them to get their own bread and butter, and go into the business of raising baby bees. In order to get a bumper crop from tupelo it will be necessary to have rousing big colonies. The whole scheme, in brief, is to build these single-story colonies into two-story ones, secure the crop of tupelo honey in March and April, and, when tupelo is over, split up these 300 two-story colonies into 600 or 700 single-story colonies; load them in two or three cars, and arrive in Medina for the early fruit bloom. A man who is thoroughly familiar with the Apalachicola regions will go with the bees—Mr. Ernest Marchant, who has been in charge of some seven apiaries for us during the past season. He believes he can take the 300 colonies to the Southland, where he was born and reared, and where he knows the locality thoroughly, build them up, and come back with twice the number of bees, and it is not impossible. He figures that the tupelo crop (if we get it) will pay for the cost of the experiment, and give us, with the bees left at Medina, a total of something like 700 colonies by the first of May. If Mr. Marchant were not thoroughly familiar with the conditions in the Southland there would be a great deal

of risk; and there will be risk as it is. We expect to give occasional reports of how the plan works; for if it succeeds there is no reason why any beekeepers in the North can not increase their investment in the same way. For example, Mr. R. F. Holtermann has a capital of some 600 or 700 colonies—that is, capital that is tied up for seven months in the year, barely maintaining an existence. During that time they will consume a large amount of sugar syrup or honey. Now, then, suppose he takes this capital, goes south with it, builds the bees up, secures a crop of honey, then comes north, ready to take another crop. It is not impossible. Our two carloads of bees a year ago this spring secured a crop of tupelo honey on the Apalachicola River, and then came north and secured a fine crop of clover and basswood. In other words, the same colony (not the same bees) will be on the job practically ten months of the year instead of four or five as now.

As already stated, we bought out a location on the Apalachicola River that has already made good. It is remote from any other beekeepers; and even if foul brood should develop, which is altogether unlikely, there will be no danger of transmitting the disease to other apiaries. All of our bees in and near Medina have been thoroughly inspected by our State inspector; and when next May arrives, all our bees in the South will be moved northward. Experience shows that we can move bees from Florida to Ohio for a little less than \$1.00 a colony. This includes freight and all other expenses of a man accompanying in connection with the moving.

Of course, this whole scheme may prove to be a grand fizzle. There may be a failure of ti-ti and tupelo; there may be a failure of pollen, and that would be as serious as no nectar. The weather might be bad. A flood might sweep the bees into the river; a railroad wreck might play havoc with the whole proposition; a thousand and one things might happen. They are all possible; *but we are going at this thing as if we were going to succeed.* Our experiment of securing two crops, one in Florida and one in Ohio, with two carloads of bees two years ago was a success. Mr. A. B. Marchant secured the tupelo honey before he delivered the bees to us. We moved them north, and caught the clover, and made 50 per cent increase. This time we hope to catch both crops, north as well as south, and get 100 per cent increase to boot. It's a great scheme if only *half* our dream comes true. In the mean time our readers shall have the benefit of the failure or success by reports from the field.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

THE tariff on honey is now ten cents a gallon instead of the old rate of 20 cents. I don't believe the change will make much of a dent in the business.

C. F. BENDER has given the key to a troublesome puzzle. The Root Co. found that it killed queens to keep them in cages of wire cloth not painted, and I never found any harm come of it. Mr. Bender explains that the Root Co. used galvanized wire cloth, while I used bright tinned wire cloth.

"OTHER things being equal, the highly fecund strain will produce a proportionately large amount of surplus," p. 605. But the trouble is that "other things" are *not* equal. At least I think that has been the rule here. When I've found a queen of fecundity above the average, industry or some "other thing" has not been equal to the average, so that, while a fourth more brood has been reared, a fourth less honey has been stored.

A. I. ROOT, let me endorse your advice to take care of the teeth, p. 657. Especially does that apply to the young. When I was a youngster I got into the habit of brushing my teeth, and now at 82 I have 29 fairly serviceable grinders, and ready for a chewing match with you any day. If you young folks can't brush your teeth after each meal, at least brush them after the last meal of each day, and not allow food to be decaying all night long between and on your teeth. Then you won't need store-teeth at 40 or 50.

LOUIS H. SCHOLL, p. 615, speaks of the loss of time caused by many bees foraging over the same ground near a large apiary, and others having to go a great distance from home. I wonder just how much bees crowd one another. It seems natural to think that near home it would always be crowded; but is it? If a piece of honey is thrown out, the bees will crowd upon it, but do they crowd upon the flowers? And if not, what wonderful knowledge is it that tells the bees just how to distribute themselves over the ground so as not to crowd?

G. M. DOOLITTLE, aren't you letting the drones off a little too easily, p. 603? A square foot of drones occupies the same square space as a square foot of workers, but you forget the thickness. I've just measured a new comb containing sealed drone brood, and it is $1\frac{1}{4}$ inches through. A similar worker-comb was 1 inch through. That makes drone-brood occupy 25 per cent more cubic space. Add to that the 14 per

cent longer time that drone-brood requires, and it makes a square foot of drone brood cost 39 per cent more than a foot of worker brood.

"HAS it been proven beyond doubt that there is any advantage in cutting alfalfa before it comes into bloom?" p. 633. I don't know how it is out west, but I do know that there is no doubt about it here. Wait till it is all in bloom before your first cutting, and the young shoots from the bottom (which shoots make your second crop) will have grown so high that they will be spoiled at first cutting, or else you must set your sickle-bar so high that you will not get all of the first crop. Besides, I think that, if you waited for full bloom at each cutting, you'd get about one crop less in a season, and so less hay. It is not believed here, as stated on p. 656, that cutting before bloom gradually reduces the tonnage, and eventually kills the plant altogether. The thing most blamed for killing is the failure to apply periodically a dressing of two tons of ground limestone to the acre. [We shall be glad to get more light on this question. Perhaps some of our subscribers in the West can give us the information. If so, our columns are open.—Ed.]

MRS. Y. N. WESGATE asks, p. 620, whether some man can't devise an easier way than wiring frames. Why not try foundation splints? With them I don't use wire at all. [Foundation splints are perfectly satisfactory for the prevention of sag in foundation or in combs. We know that combs, even after they are drawn out, have a tendency to stretch vertically. This stretch occurs usually in very warm weather during a rush of honey. Splints will stop the elongation of cells on a vertical line; but they will not prevent combs from falling out or breaking out, during the rough handling of extracting time, like wires attached to the frame. You are a comb-honey producer, and, of course, experience none of the troubles of the man who produces liquid honey; but if you go into some large extracting-yard where combs are being handled in a wholesale way we believe you will become convinced that nothing short of wire secured to the frame itself will be satisfactory. Some one, perhaps yourself, suggested having the bottom-bar split so the splints can be placed between. If both top and bottom bars split so that the splints can be rigidly secured to the frame, they might prove satisfactory to the extracted-honey man.—Ed.]

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

A few days ago I was surprised to see a bee down on the ground busily working on the fallen bloom of the date palm. There were dozens of them up on the bloom stems, but this fellow was evidently finding something to pay him for his labor among the fallen thousands.

* * *

I have just enjoyed a visit from my friend M. H. Mendleson, of Ventura. I doubt if there are a dozen beekeepers in the United States who are as well informed on all lines of the industry as he is. With over forty years of constant work he has had an experience that the majority of beekeepers will never enjoy. He has faced the ups and downs with the seasons; is an experienced producer of both comb and extracted honey, and has buyers standing with cash in hand for his comb product. His honey has won its reputation on merit. It takes years of careful work and honest dealing to gain such a reputation.

* * *

In the Aug. 1st issue I read of the capture of two swarms by J. W. Stine, one in a nail-keg and the other in a sack. I have frequently carried swarms in a sack, but about the most novel scheme I ever knew of being used was by a young lady returning from town on horseback, without a thing in the nature of a receptacle to put a very large swarm in that chanced to be on a bush by the roadside. After some deliberation she decided to make a hiving-bag of her petticoat; so she loosened it, stepped out, tied a string tightly around the top, then slipped it over the bush and swarm, tied another string tightly below the cluster, broke off the bush, and went home with her prize.

* * *

I was much interested in Wesley Foster's account of how his Uncle Oliver soaked his hive lumber in oil before nailing. There are a few of those old timers who believed in doing things thoroughly, with the idea that it would pay, and they were correct. Many beekeepers in this part of the State will remember my uncle, J. K. Williamson, who was a beekeeper for over twenty years; but who is now located on a small ranch in Mendocino Co. He always soaked the ends of his hive pieces in linseed oil, and carefully painted all joints before nailing. Many thought it a waste of time and money, but I am now using some of his hives that have been in use for twenty years. They are still in excellent condition.

THE ADVANCE IN THE PRICE OF HIVE LUMBER.

There was a period in the history of our country that might be called the virgin-soil period. That period has about passed, and is giving way to modern methods. This period includes the period of the virgin-soil farmer who could raise good crops with very little equipment or expense, because the soil would produce year after year if the farmer would only keep the weeds down. But now the soil is becoming worn out, requiring crop rotation and scientific methods of treatment. With modern methods of handling a crop, much more machinery is required than of old, enabling the crop to be handled quickly and cheaply. How about beekeepers? I wonder if there are not many of us who are virgin-soil beekeepers. We get along well while the seasons are good and every thing is prospering, there being little to do but to extract and to melt up the wax; but in a season like this, when the supply of bees as well as the stores are small, and the colonies must have individual care and careful watching, we begin to wonder if it will be worth while to spend money for feed for the bees.

The virgin-soil farmer is feeling the same way, for he too is being forced to give much more care to the old farm than when the crops came regularly with little effort. Do not let the bees die. If you have neither the time nor inclination to give them the proper care, why not sell out and save yourself a loss? Does the average beekeeper know that the hives that he purchased a few years ago are worth more now than when they were new? I met a friend on the street yesterday, who is the manager of one of our local lumber-yards. After a short conversation I asked him the price of various kinds of lumber, and his answer took me greatly by surprise. Sugar pine that a few years ago sold for \$30.00 a thousand is now worth over twice that amount; clear sugar pine that my uncle paid 6 cts. per foot for four years ago for hive covers is now selling for 15 cts. a foot. Hives, if they have been well taken care of, are worth twice what they were a few years ago; and those who think of selling their bees and location with the idea of starting in new, would do well to figure closely on the cost, lest they be fooled out of some money. A few years hence our present methods will be considered antiquated. The time will come when apiculture will be taught in all agricultural colleges, and the science of the business will be one of the features of instruction.

Notes from Canada

J. L. BYER, Mt. Joy, Ont.

For the past week I have had the unusual spectacle in my apiaries of seeing great clusters of bees hanging out over the fronts of the hives. I have never seen this before in October, and may never see it again. The unseasonable heat is, of course, responsible for this, and in colonies that had been fed heavily the bees were outside of the hives as in hot midsummer weather.

* * *

In my notes for Oct. 1 I said that nearly all parts of Ontario had the long prevailing drouth broken by copious showers. This was true at the time of writing; but the few showers that came at that time ended abruptly, and since then no rain has fallen. At this date (Oct. 10) every thing is as dry as a bone, and we have been having torrid weather, with temperatures up in the eighties—an unusual condition for October here in Ontario.

* * *

Most of my feeding is done, but there are a few colonies yet to feed. These were examined to-day, and in every case the queens were starting quite a large brood-nest, only eggs and very young larvæ being present, showing that the unseasonable weather is responsible for this condition. Too warm weather at this time of the year is not the best thing for helping wintering conditions in our latitude; but quite likely we shall soon get an extreme change, and this late brood-rearing will then be checked.

* * *

Secretary Pettit reports that the Ontario Beekeepers' Association now has over 1300 members. An aggressive campaign in the way of organizing new county associations is largely responsible for the large increase in membership, as the majority of the members of the local associations join the Provincial association too. Whether the usefulness of the association will increase in proportion to the increase in membership is a question; but according to the old motto, "In union there is strength," the more powerful the association is in numbers, the greater chance it should have in the matters of securing legislation and in forwarding other interests necessary for the industry. That work of that nature should be expected of the association in the future more than in the past is the opinion of many.

* * *

The convention of the Ontario Beekeepers' Association will be held in Toronto, Nov. 18-21. Of course we are expecting a

large attendance, not only from Ontario but from the States across the border. All the counties near Toronto have this year had a fine crop, and this will, no doubt, be a stimulus to many to attend, who otherwise might not put in an appearance. It is needless to say, the officials of the association are very anxious for a good attendance, and certainly anticipate having a pleasant and profitable reunion. A hearty invitation is extended to our friends "over the line" to come and visit us; and it will be a genuine disappointment if a number of them do not put in an appearance. The convention is at a time of the year when beekeepers, as a rule, are not busy. So, pack your grip and take a trip to the Queen City of Canada, not forgetting to bring your wife with you.

* * *

Some time ago I noted that Mr. McKinnon, of St. Eugene, Ont., claimed that his Italians worked as far away as four miles from home. In common with previous claims of this nature on the part of others I rather doubted the truth of the matter, for while I would not question Mr. McKinnon's veracity, yet I felt that there was a possibility that he might be mistaken. Just a few days ago he wrote me that he would like to have me there to prove that he was right; that at that time his Italians were cleaning up a batch of blacks about four miles away, and, in addition to this, they were cleaning up the honey from a bee-tree that had been cut down, which was $3\frac{1}{2}$ miles distant. I think I shall have to admit that his claims are correct; but for the life of me I can not tell why my bees acted differently some years ago. At that time there was an abundance of buckwheat about four miles distant; and while bees in that district would store a surplus our bees would not get a smell of buckwheat, and there were Italians in the apiary from different breeders in the States, some of Doolittle's strain at that, and you know friend Doolittle is right in line with Mr. McKinnon on the question of bees going a long way for nectar. While on this subject I must frankly admit that this year we had bees travel four miles; but it was under conditions different from those we have ever had before. The Lovering apiary is two miles from the water, and the bay is two miles to the opposite shore. Thousands of bees flew across this stretch of water, and I rather surmise that, in case of a head wind blowing against loaded bees, this long fly over the water would be detrimental rather than otherwise.

Beekkeeping Among the Rockies

WESLEY FOSTER, Boulder, Col.

Fair time comes too close upon the honey crop to give beemen time to exhibit as they should; but the advertising of honey is a matter that needs serious thought.

* * *

Bees were poisoned badly this year in Delta Co. and parts of Montrose. Little of this seems to have come about by spraying in blooming time, but the late sprays falling on clover when the bees were working on it caused the trouble.

* * *

If a number of nuclei are started during midsummer they are always very handy when fall comes, to use in strong colonies that are queenless. I always have a few queenless colonies in September and October, and these nuclei save the day in very good shape.

* * *

PECULIARITIES OF THE SEASON.

This year colonies of bees occupying two full-depth Langstroth bodies had, without exception, more brood sealed and hatching than single-story colonies. It seems to be during late September and early October almost an invariable rule that colonies occupying single bodies had little if any brood. Many had a patch of eggs, but no larvæ or sealed brood, showing that the queen apparently had difficulty in shutting down her egg-laying. Colonies with young queens of this year's rearing have more sealed brood than the others. Our fall flow has been better than common; breeding has been ample, and our colonies will go into winter with good stores, and large numbers of young bees.

The last two weeks have brought us several very good rains, and killing frosts have been later than usual. Sweet clover and alfalfa have been wonderfully helped by these late rains. These rains have been in the valley; snow has fallen on the mountains in some parts of the West, so that prospects for next year look encouraging. The late rains will also probably destroy many of the grasshoppers' deposits of eggs in the ground. Dampness is very destructive to them.

* * *

GEORGIA VS. COLORADO.

It is interesting to read of Mr. Wilder's success in beekkeeping in Georgia, when one of our largest and most successful beekkeepers in Colorado came from Mr. Wilder's country because there were no opportunities

there. He told me recently that he probably would have done as well to stay in Georgia. What we should like to know of Mr. Wilder is whether there is flora enough to support several hundred specialist beemen with three hundred to three thousand colonies, or will Mr. Wilder own all the bees and have all the capable beekkeeping timber among the darkies working for him before some of the rest of us get settled there?

Two hundred thousand pounds of honey is nearly as much as we can produce in our county, and here it takes twenty-five men and a dozen automobiles to do it. But we raise comb honey almost exclusively. For fear that Mr. Wilder will get all the good beemen trailing toward Georgia, I will say that Colorado still has opportunities, and we have the climate, the flora, the *good roads*, and a fine class of people. Many beemen are making their living from keeping bees, and do not follow it as a side line.

* * *

SWARMING IN COLORADO.

This has been another swarming year, violating all rules of good behavior that we generally expect from "mile-high" bees. We lost a good many swarms, and the demoralization has caused the loss of a good deal of honey. The bees swarmed with or without cells or eggs in them. The only thing that seemed to prevent it was to kill the queen. We had to shin up trees as the editor of GLEANINGS did, but perhaps we had better success in catching the queen at the entrance as she came out. Even though only a virgin, I had very few get away from me. One needs to be quick if he wishes to catch a queen the minute she stops to look which way to take wing. If he misses a virgin on the first grab, the chances are that she will get away; and then if she is not caught there are probably other virgins with the swarm. But if I caught the prime swarms I did not have any second swarms, and very few of them did I have this year as it is.

The editor has come forward with an almost sure cure for swarming by the use of inch blocks. We in Colorado have been envied for our freedom from swarming troubles, but we had them this year and last. The plan of Mr. Vernon Burt is as old as the hills (almost), and is good; but, oh don't give it out as a cure or even a preventive! it will delay swarming sometimes until a few cold cloudy days come, and the flow lulls; then the bees tear down the cells, but the cool weather or the lull in

the flow is the preventive, not the blocks. I have used the blocks, and do yet; and I go further and shove the covers and supers backward and forward, and the swarms leave just the same. The ventilation surely helps, but I could have shown colonies so treated swarming by the dozen this past summer. Bees swarmed here right through August up to within a week of the closing of the flow, and we surely had a time with them.

* * *

MAKING INCREASE IN AUGUST OR SEPTEMBER.

In my Harmon apiary I had sixty extracting-bodies of full-depth Hoffman frames that were about full of honey. In my other apiaries, and also in the Harmon apiary, the bees were still swarming late in the season, so that I had available some fine cells for starting nuclei. I wanted a lot of young queens for what increase I got, so I started sixty nuclei in my Crosby and Superior yards of one or two frames each; and early in September, when these queens were laying, I took off my extracting-hives at the Harmon yards and hauled them to the nuclei apiary, giving one or two full sheets of foundation or empty combs for the queen to rear brood in to strengthen them for winter. The comb-honey supers were then coming off my surplus colonies, and most of these had more bees than they needed. True, many of these bees were old and worn out, but I used them just the same. I shook out one or two pounds of bees from one or more colonies into one of my tin covers, and over them tacked a movable screen cover. This gave the bees a space three inches deep and the size of the hive. In these covers I quickly moved a lot of bees to my nuclei in the other apiaries, and strengthened them. The moving was necessary to preclude the return of the bees to their own hives. The young queens had most of September for breeding up, and by this means I have been able to get some extra colonies of bees in prime condition for wintering.

* * *

BEEKEEPING IN THE PLATEAU VALLEY.

In the Plateau Valley beekeeping enters into diversified farming operations almost as much as alfalfa-growing. Nearly every farmer has his neat honey-shop close to the house. The apiary at one side or behind the house, some distance, is often a model of neatness. Few box hives are to be found in the valley, and foul brood is all but unknown—a small percentage only being found in the lower part of the valley around Molina and Mesa.

When I visited the valley early in September it was the rule to find the beekeeper-

farmer and his wife at work cleaning and packing comb honey ready for the market.

Comb honey is the sole shipping product of the apiaries, very little extracted being produced. The price secured has been from about \$2.40 to \$2.65. The honey is packed in 24-pound single-tier cases, with glass front or wood slides. Two grades are made, more attention being paid to weight than color. Considerable attention is given to finish in grading. The honey is sold through fruit associations at Palisade, Debeque, and Grand Valley, which are loading stations on the railroad, fifteen to twenty-five miles distant. The fruit associations charge 5 per cent for selling the honey, and pay for it when it is loaded into the car. They do not pay for the honey, however, until a sale is made, although they may have verbally contracted for it.

One thing I have noticed in various places as well as in the Plateau Valley: The produce dealers offer good prices for honey early in the season. The beemen haul in the honey to the warehouse, but the dealer or association does not generally sell until a car is about ready to load. Then if the price has fallen he tells the beeman that he can not pay so much for the honey. I have found this method altogether too prevalent. The beemen have ended this uncertain manner of dealing in some places, and it is time that it was ended in all. When one has an offer of so much for his honey he should clinch the bargain with a cash-down payment of fifty cents to a dollar a case, and then live up to the bargain and make the buyer live up to his.

The farmers, most of whom have some stock, told me that honey is their money crop. This is more generally true of the farmers in the Plateau Valley than in any other part of Colorado where I have been.

An incident will illustrate the prevalence of beekeeping. I went into the general store and postoffice at Plateau City to get a bill changed, and was handed a dollar among other change. It was so daubed with propolis that I could hardly see the eagle. Do you suppose the postmaster knew I was a beeman?

The winters are more severe in the Plateau Valley than twenty-five miles further down in the Grand Valley around Grand Junction, and the winter stores are more likely to granulate and cause winter losses. There is a great deal of waste land upon which sweet clover grows, which is the main reason for uniformly good crops. The greatest drawback, as I saw it, is in having to haul the supplies fifteen to twenty-five miles, and to haul the honey this distance to the loading station.

Conversations with Doolittle

At Borodino, New York.

MOVING BEES.

"I wish to know something about moving bees, especially the details connected with it, which are usually left out by those who write on this subject."

Much depends on how far bees are to be moved. In moving them to and from an outyard, from three to five miles away, I have been fairly successful—so much so that I never had any trouble by injury to the bees, to the horses, or to myself. I place the hives carefully on a spring wagon, just as they stood in the apiary, bottom-boards and all undisturbed, and cover them with a large canvas, such as is used to protect haystacks before their completion. In hot weather this way of moving bees requires a cool cloudy morning or the close of the evening. If the wagon is not overloaded, so that the springs hit, or the hives jostle together on a rough or stony road, the bees will hardly come out from the entrance.

Much depends on those who load the colonies. If they can not pick the hives up and put them in the wagon so carefully that the bees remain quiet, or nearly so, it is better to use smoke until the colony is subdued, and then put them in the wagon without even so much as stopping up the entrance, and drive off with them. Naturally one would think that many of the bees would leave the hive and go away; but only a few will do this. One year I moved some bees in this way about fifteen miles. I started out with them on the evening of a very sultry day, over a rough road. A neighbor had bought them in the month of June, just before swarming, when the hives were full of bees, and we had no trouble in moving them. The hives were set about six inches apart, so that the bees from one hive would not be liable to run over into the neighboring hive on either side. When we arrived with them the larger part of the bees were on the outside of the hives. They were allowed to stay thus until the early twilight, when, with the use of a little smoke, we had no trouble in putting them on the stands.

But when bees are to be moved long distances it is better to prepare for this by giving ample ventilation, which is an important item in the successful moving of bees where they must be confined to the hive. This is always the case where they are to be shipped through any transportation company. I find a rim three inches deep, the same size as the hive, covered with wire cloth, none too much; and if the colonies are very strong, four inches is better. Put one of these on the bottom and one on

the top, and fasten securely. After trying many kinds of fastening I have found nothing better than lath, such as is used in plastering houses. For length, cut so they will reach from the top screen to the bottom one, being a little "shy," so that the ends will not catch against other screens or any thing on which they are loaded. Use four to each hive, nailing one at each corner to both hive and screens, this making a most secure method of fastening firmly both screens and hive-bodies. It gives even the strongest colonies plenty of ventilation, and plenty of room and space to cluster away from the combs of brood. In this way little or no loss occurs to either brood or bees.

With ample provisions by way of honey I have shipped bees to many of the Western States, and some to California, or nearly across the continent. Some claim that water is necessary, and it might be for shipments across the continent during July and August; but so far I have never used any, and have had no loss reported. In the front end of the bottom screen bore a $\frac{3}{4}$ -inch hole when making the screens. This makes an entrance for the bees, and thus allows putting the screens on several days in advance of the day of moving. It gives the bees a chance, too, to fly when they arrive at their destination, just as soon as the hive is set on the stand they are to occupy. Under these circumstances the unpacking can be done more at leisure than would be the case if the first flight were to come with the unpacking. To stop this hole when moving, use a cork or plug. I generally get a lot of dry corncobs, pushing a piece of the right size in the hole, and twirl it around until it wedges in tightly. The frame for long-distance shipments should be securely fastened in the hives, so that they will not slide together nor swing. Where self-spacing frames are not used, pieces of lath of the length of the inside of the hive can be used to fasten the frames securely, nailing one at each end (on top) down through the end of each top-bar and the hive. The nails should be long enough to reach into the wood of the hive from half to three-fourths of an inch. Now tip the hive up on end and stuff old newspapers in the bee-space between the ends of the frames and the end of the hive. If the hives are to be moved by wagon it is important to load them so that the combs run sidewise in the box, as the greatest strain on the combs is from the box swaying from side to side. When shipping by railroad, the combs should run lengthwise of the car.

General Correspondence

REMARKABLE COMPETITIVE EXHIBIT OF BEES AND THEIR PRODUCTS AT THE CONNECTICUT FAIR, HARTFORD

BY BURTON N. GATES

A most remarkable and unique apicultural display is annually made at the Connecticut Fair, Hartford. It is by far the most spectacular beekeeping show now available in the East. The management has an abundance of enthusiastic material available in Connecticut beekeepers. The beekeepers have an exceptionally interested fair management and well-equipped fair building, 75 x 50 feet. There is, moreover, an aggregate of \$500 in premiums. Consider what this means to the promotion of the industry when upward of 150,000 people attend the fair.

The large electrically lighted building with electric signs, of pavilion type, and accessible near the entrance to the grounds, is apart from all other displays. (See Fig. 1.) Thus the apicultural display is distinctly a feature. In contrast it is to be regretted that the honey show at some fairs is frequently merely an annex to the fruit or flower shows, or even to the poultry exhibit, which, of course, makes it less distinctive. The illustration shows a few of the attendants and exhibitors.

At Hartford the competition is "open to the world," with this restriction—that competitors must be or become members of the

Connecticut Beekeepers' Association. This applies with exception to the section designated "Culinary," comprising cookery in which honey is used, and to the "Displays by Novices."

Another distinctive feature is that the premiums are offered and awarded by the Connecticut Beekeepers' Association, of which Mr. A. W. Yates is the present Chairman of the Committee on Fair. In this way the best interests of beekeepers are fostered; also the excellency of the display may be attributed to this provision. The Association, being incorporated, receives from the State a bounty for premiums, which accounts for the fact that, since 1908, when the Association began to make its competitive displays, the premium awards have advanced from \$35.00 to \$500. This is a surprising and admirable development in six years. The earnestness in the display of products is further maintained by a slight entry fee of 25 cents for each entry in practically all classes.

At the present display, made the week beginning September 1, there were upward of twenty competitors. The extent of the displays may be judged from the fact that there were approximately fifty colonies of bees and from eight to ten tons of honey on exhibition, besides displays of cookery, wax, and products not specifically called for in the premium list. Another feature of the Association's effort is the acquainting of the public with honey.

Concessioners have for sale wax, honey in all forms, and honey sandwiches. It is estimated that the sales of concessioners may be as high as \$100 on the large days of the fair. A fee for space is required from each concessioner.

Still another feature which has especially interested the public is the daily manipulation of bees in a cage. Such demonstrations, as beekeepers know, attract large audiences. This handling of bees may occur several times a day, and is scheduled according to the attendance at the fair. The management



FIG. 1.—Beekeeping, Exhibit Hall, Hartford, Ct. The pavilion is 75 x 50 feet, with an open front. Some of the concessions are shown grouped in front.



FIG. 2.—The Concessioners' Exhibit at the Hartford Fair.

is also making a feature of the display of commercial supplies for beekeepers. Some of the concessions may be seen in Figs. 2, 3, 4.

The premium list is exceedingly liberal, and is a true inducement to the beekeeper to make a display. For instance, for each of the races of bees with their queen, three premiums are offered, being respectively \$10.00, \$8.00, and \$5.00. Liberal premiums are also offered for queen-rearing outfits, being \$16.00, \$10.00, and \$6.00. In the classes of honey, the premiums are respectively \$10.00, \$8.00, and \$5.00. For the largest and most attractive display of honey shown, the premiums are \$24.00, \$16.00, and \$8.00. Part of one of the large honey displays is shown in Fig. 4. The sums of \$10.00, \$8.00, and \$5.00 are offered as premiums for the best displays of beeswax, of which there must be at least ten pounds. A sweepstake of \$25.00 is offered. This was won by Mr. W. K. Rockwell, of Bloomfield, who also took first premiums on Italian, golden, Carniolan, and black bees, the best display of the different races, and the best display of queens in labeled cages. It must have been some satisfaction to Mr. Rockwell to realize awards amounting to \$130.00. Other competitors secured respectively \$71.00, \$61.00, \$43.00, \$30.00, and lesser amounts.

In the honey classes, Mr. H. W. Coley, of Westport, secured the first premium on the best ten sections of comb honey, the best section honey packed for market, the best candied honey, and the largest and most

attractive display of honey in general. An award of \$10.00, first premium, was made to Mrs. H. O. Havemeyer, of Stamford, on dark extracted honey. An award for twenty-four jars of chunk honey was made to Mr. C. H. Clark, of Cobalt, of \$10.00 as first premium.

The writer personally examined the entire displays, and can not but express satisfaction in the quality of the material exhibited, and the difficulty which the judge, Dr. D. Everett Lyon, must have experienced in making awards. The general excellence of the displays show that

the beekeepers have learned what competition means. But few restrictions are prescribed by the Association. As might be expected, exhibitors can compete for but one premium with the same exhibit, excepting, of course, sweepstakes. The honey, excepting candied honey, must be of the current season's crop; wax must not have been previously exhibited, and all honey and wax must be a product of the apiary of the exhibitor. The Association also emphasizes in displaying comb honey, the perfection of filling and capping, the neatness and completeness of cappings, and the general appearance for market purposes. More and more emphasis is being laid upon freeness of sections from propolis; therefore the beekeepers have learned to clean their sections. Extracted honey is judged for its body and flavor, clearness, cleanliness, and general appearance of marketability.

Inquiring of the management, the writer was told that, in the last few years, exhibitors have learned to avoid mistakes, and how to exhibit. Nothing like competition will bring about closer grading and selection of products. For instance, those who have had the most experience in displaying have learned to bleach their sections and grade them for evenness, in weight, capping to the wood, and color; they have learned to use new shipping-cases and bright sections. Moreover, the cases preferred expose the entire section. Sections of full worker comb, or the avoidance of drone comb, is another feature. The management also emphasizes

that all honey displayed must be glazed, or in cartons which are bee-proof. Consequently the type of carton with a peekhole or other opening through which bees can enter has been prohibited. The larger displays are made on glass shelves so that the light can penetrate on all sides. This is an important feature, and the exhibitors told the writer of their particular effort to avoid shading any part of their exhibits. Some effort is made to bring electric lighting to the rear of the displays of honey.

The management and individual competitors are agreed in an effort to vary from year to year their displays, thus avoiding monotony and adding to the general interest of this department of the fair.

Seldom are fifty colonies of bees seen in one competitive exhibition. It is expensive to show full colonies, and the writer raised the question how beekeepers could be induced, especially in the fall, to make such an extensive exhibit (Fig. 5). The reply was, "They are small nuclei." This is a far less tax on the colony, is no great expense to the beekeeper, and is not especially hard on the bees. To show full colonies would mean that there would be but few competitors. It is by using the nucleus, with about half a frame of bees, that this excellent and large exhibit has been made possible. It also enables the queen to be found early. It was noticeable, however, that but few of the colonies displayed drones. This was brought to the attention of the exhibitors, who agree that, in the future, one of the requisites in displaying bees should be the including of drones as well as the queens and workers.

In competition of the black bee, considerable discussion was created over the marks. Mr. Allen Latham emphasized in the true black type the absence of "chocolate markings," and, if possible, the blackness of the legs, especially of the queen. Throughout the displays of bees there was close competition. Some of the more unusual races, such as Cyprians, Banats, Egyptians, etc., were absent. The first prize



FIG. 3.—Arranged in front of this concession are shown some of the nuclei entered in competition at the Hartford Fair.

in each of the classes of bees was won by Mr. W. K. Rockwell.

From the educational standpoint, the peculiarly important feature of the bee show is Section 3, "Competition for Novices," in which it is prescribed that "no one previously exhibiting or receiving premiums will be considered in this department." These excellent provisions annually induce new beekeepers to come out for competition. While the premiums in this department for section honey, light and dark extracted honey, chunk honey, and two pounds or over of beeswax, are respectively lower, \$3.00, \$2.00, and \$1.00, it prevents the smaller or newer beekeeper from feeling that he has no possible chance of winning in competition with the more professional class; yet the novice, of course, is privileged to display in competition with the experienced beekeepers. Mr. Walter Beeman, of Bloomfield, seems to have been the important novice exhibitor this year, taking largely the first premiums in each class. Mr. J. E. Wallbeoff, Wethersfield, came in for the second premiums, largely. It has been noticeable in most honey shows that these excellent provisions for the novice are not provided. This is a marked step in advance for the promotion of interest in beekeeping.

While the culinary section of the exhibition was, perhaps, less extensive than the other departments, the judge is quoted as having expressed his opinion of the superiority of the honey muffins, cookies, cakes, canned fruit, and pickles displayed. The



FIG. 4.—One of the honey displays at the Hartford fair is shown at the rear, in front of which is grouped a collection of competitive colonies. The shelving for the display of honey is of glass.

exhibitors called special attention to the canned fruit, which in every way rivals fruits canned with sugar. It is to be regretted that beekeepers are not making more of this feature of the utilization of their product.

With the public, the sale booths, where honey-sandwiches are offered, seemed to attract considerable attention. The vender of these luscious sandwiches warns the novice salesman against possible disastrous results through a sudden influx of robber bees. The booths are specially constructed for handling the honey; being immaculate in appearance, the prospective purchaser is convinced of the cleanliness of his sandwich. The part of the booth where sandwiches are prepared is entirely enclosed with netting to prevent the access of "robbers." The secret of success is, of course, the prevention of the first robber bee from returning to the hive with a load. The sellers of honey-sandwiches elsewhere, to the writer's knowledge, have been forced to

close up their stands because robbing had gained such headway. Those selling honey at a fair can well remember the remedy for checking the approach of robbers. A weak solution of carbolic acid sprinkled about the booth will do much to repel them. Everybody being anxious to "see the queen," one of the calls of the honey-sandwich man is, "Come and see the queen!" He may have a queen in a mailing-cage or in a nucleus. Attracting his crowd by this means, he then induces them to try some honey. Tactfully, too, he urges the visitors to go among the rest of the displays. In this way many a person who is not familiar with the taste of honey acquires a liking for it. In talking with people around Hartford, the writer had but to mention the bee show when he was asked with enthusiasm, "Did you have a honey sandwich?" It is thus evident that the honey-sandwich is a key to the venture.

Amherst, Mass.

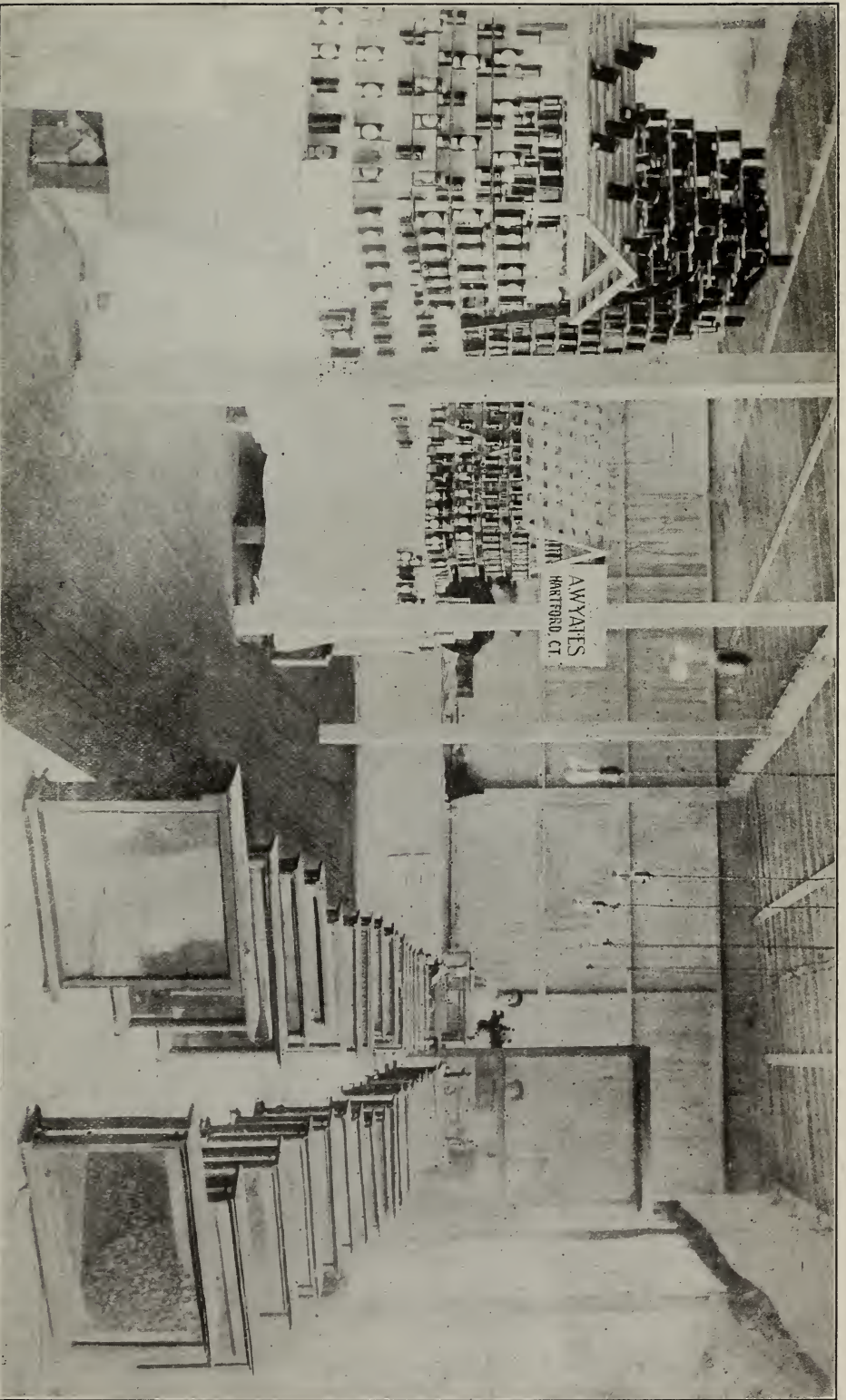
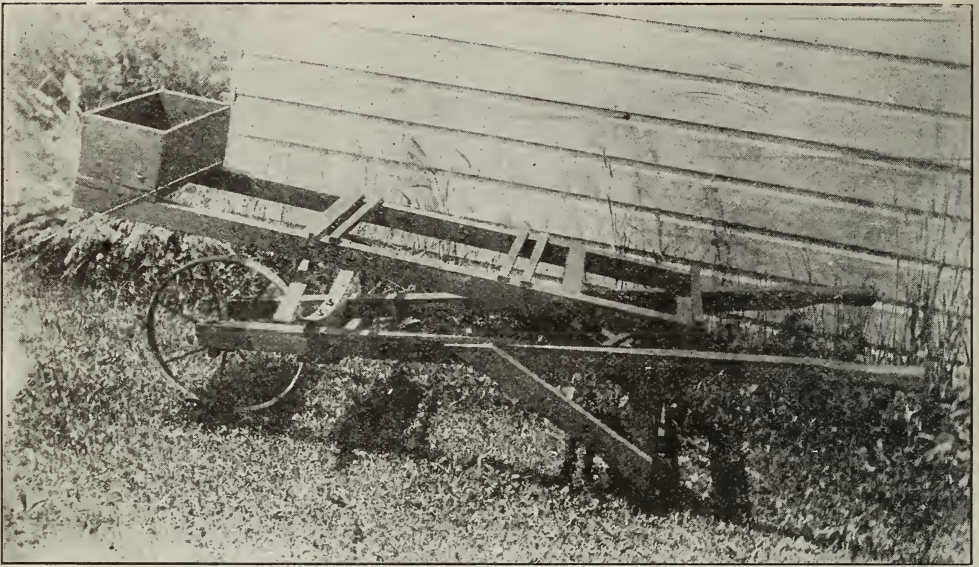


FIG. 5.—Another view of the honey displays shown in Fig. 4. A long range of about fifty colonies of various races is shown at the right. In the rear of these comparative displays is a demonstrational cage for the handling of live bees.



The spring wheelbarrow used by Ed. Swenson, of Spring Valley, Minn. Used for hauling bees and honey. The box in front is for carrying the smoker and tools.

FOUL-BROOD INSPECTION IN IDAHO

Some Interesting Details of a Bee Inspector's Life

BY W. E. RAMBO

Anent your account of foul-brood inspection in Ohio, p. 516, Aug. 1, a similar experience in Idaho may be of interest. I bought two colonies in the spring in box hives at half price, intending to transfer and build up a small apiary. I set standard hives on top of them till the queen should begin work. When that took place in one, I cut out the old combs and found a bad case of foul brood. This induced me to transfer the other colony at once. I found it still worse. The first colony produced a fine lot of sealed brood which became badly affected by hatching time, necessitating a second transfer. Both colonies are doing well now, but will accomplish nothing more than preparation for winter.

I began to inquire, then to suspect, that foul brood was very prevalent. I wrote the State Inspector. He sent Mr. E. J. Johnson, of Fruitland, inspector for District No. 6, which includes Boise County and the Payette Valley. I accompanied Mr. Johnson on July 21 and 22, mostly on foot. The experience was an eye-opener. Many colonies were in boxes. Many that were on loose frames had been put in without starters or foundation, and the combs so badly crossed that inspection was practically impossible. The law in Idaho condemns all such, giving the owner five days within

which either to transfer or destroy them. Of hives that could be inspected, over 10 per cent were found infected with foul brood. Here are figures kindly given me by Mr. Johnson:

In fifteen days' inspection, between May 28 and July 31, 965 colonies were inspected. Of these, 171 were condemned, being in box hives, and 103 for foul brood; 691 were passed. Those in boxes included nail-kegs, a wooden jacket from an oil-can, old tubs, soap-boxes, stick gums, etc. I suspect that many of these had foul brood. The common excuse for conditions was: "This gold-durn swarm lit out there on that there plum tree, 'n' I jes' shuck 'um into that nail-kag. I don't know nothin' about 'em, 'n' I don't care a durn fur 'em. I jes' cal'ated I'd sulphur 'em in the fall and git some honey t' eat; but 'f your s' durn pertickler about ut, I'll jes' kill 'em right now. I can't do nothin' with 'em; they jes' sting me, 'f I go in a rod uv 'um, 'n hit's pisener 'n' rattle-snakes." Well, may be 10 2-3 per cent is not bad; and I suspect inaccessible hives will account for at least that much more. About 225 were transferred; 50 were burned; 110 places were visited, and the mileage was 385.

Mr. Johnson told me that he definitely knows of 1700 colonies which have not been inspected. Of course, there are many unknown. He passed by the larger apiaries which appeared to be well cared for, and where the owner knew and was fighting foul brood. He argued (rightly, I think) that

more danger is to be suspected in the small bunches stuck around farms and in boxes by people who have no knowledge of bees.

"But why neglect any?" you say. A passage or two from the State Inspector's notice to Mr. Johnson explains: "There being sixteen inspection districts in the State, and the money appropriated for this purpose having to be allotted to the different districts, your district was given the following amount for bee inspection for this year: \$150 for districts Nos. 6 and 7." Mr. Johnson understands this to mean \$75.00 for district No. 6, said district being perhaps one hundred miles long and a county wide, the Payette Valley alone being something like 10 x 30 miles. For lack of funds, Mr. Johnson has not seen half of the Payette Valley, and nothing at all of Boise County. Again: "I also note what you say in regard to there being no bee inspector in that district before. Heretofore there has been no request for a bee-inspector in that section. That is the reason why there has been no bee inspector in the past."

It seems a pity that foul brood should render beekeeping next to impossible here; for natural conditions are all but ideal for the business. The fruit-bloom begins by the first of April—very often much earlier. This is soon supplemented by dandelions; then white clover; then alfalfa; then white sweet clover. These three last till freezing weather, and are in abundance along the river banks and irrigation ditches, where they are kept perpetually green and blooming through the long season by reason of moisture at the roots. Alfalfa is usually cut when in bloom; but the borders remain, and it grows, like sweet clover, in all waste places. White clover is abundant, and never ceases to produce nectar, apparently.

Following is the performance of a single colony: On July 28 nearly half a bushel of hybrids were found on a fence-post in the edge of town. I was away from home, and my son hived them in an oil-box. We brought them home that night. July 29, near noon, I put them into a ten-frame hive with full sheets of foundation. July 31 the sheets were all drawn out, and partly filled with honey. August 1 the queen was laying in a limited space; frames heavy with honey, bees hanging outside at night. August 2, put on extracting-super with inch starters. August 8 queen laying in five extracting-frames which are almost fully drawn out and filled. August 9 removed two frames of honey, and replaced by two full sheets of foundation and put a section-super on top of the extracting-super. August 15, found the queen back in the brood-nest; put the section-super under the extracting-

super. August 21, brood hatching; August 26, working nicely in sections; brood-nest crowded with honey. August 27, removed the frame of honey and replaced with a full sheet of foundation in the brood-nest. August 29, bees seem crowded for room; put another super under the others.

Mr. Johnson returned on August 6 to check his former inspections and to inspect other colonies. This time he came with his wife in his automobile. He was able to take me and my wife and daughter all over the neighborhood. That night his auto stood in our dooryard, and, after having supper and an evening with us, they slept in a neighbor's house. The next morning he very kindly invited me to go home with him. The trip of about thirty miles was a great delight. We went by the "South Slope" fruit-farms and inspected a number of colonies—mostly in ramshackle boxes and gums. We met the proverbial pessimist, who declared his bees were all right, and that the inspection was a "graft" intended only to provide fat places for the "friends" of the legislators. But here is where Mr. Johnson shone best. He gave Mr. Pessimist no chance to get in a word, but talked him into silence, in the mean time digging out enough of his combs to illustrate his lecture on foul brood, and leaving his antagonist wide-mouthed with amazement and chagrin. From the fruit-farms we passed through a stretch of waste land, ruined by seepage and alkali. This changed near New Plymouth to splendid grain and apple country, which continues, I am told, all the way to the Snake River at the mouth of the Payette Valley.

THE INSPECTOR AS A BEEKEEPER.

Mr. Johnson is an old Colorado beeman. He moved to Washington a few years ago, but found conditions unfavorable. His home is now at Hillsboro, Oregon, where he spends the winters. But he moved his apiary to near Fruitland, Idaho, a few years ago. There he found two acres in sagebrush, with one canal on the north, another on the east, and the Payette Valley railroad on the south, with only the bank of the canal on which to get to the main road. This land was too high to be watered from the supply ditches, though it was almost level. Mr. Johnson bought it cheap, then cleared it; then got permission to connect a neighbor's waste ditch with the plot, so he has plenty of water free of charge. Then he widened the canal bank as far as he could go on the south side, and then bridged it, widening the north bank thence to the road. There he is in a picturesque, secluded spot, with great fields of alfalfa all about and with tangles of sweet clover along the canals and railroad. There he spends his

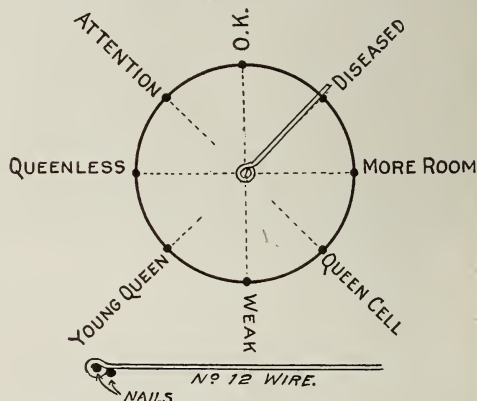
summers in a sleeping-tent; he has a shack with a kitchen, a cased honey-room, an automobile-room, and a general storeroom and workshop. He is an enthusiast with bees; has his own way for doing every thing, and violates most of the rules of the books. For example: He does not use queen-excluders; he says, "If the old lady wants to lay in the extracting-combs or supers, bless her heart, let her do so." In extracting, if he finds unsealed brood, he leaves it till it is sealed; then extracts the honey and distributes the brood to where it is needed in other colonies. He uses no followers or self-spacing frames or springs; wedges his sections in with wood from spoiled sections. In handling supers he does not try much to save bees. "A few bees smashed is cheaper than time." He has about 250 colonies, all hybrids. "The blacker the better." They are a mixture of almost every standard breed produced by the introduction of queens at different times. He says these hybrids are the best hustlers, and make the whitest honey. The stock for his apiary was formed by a lot of hybrids from southern Texas which he shipped to Colorado years ago. Some of Mr. Johnson's bees are as cross as hornets. They boiled out everywhere with their tails up sizzling with venom like rattlesnakes. He raises his own queens in nuclei formed from combs with queen-cells on them. These queens are of all shades imaginable. We found one whose head and thorax were clean of all hairs, polished, and black as ebony. That part of her looked more like a black beetle than a bee. The abdomen was of a brownish-yellow color with prominent black rings shading almost into each other along the back. Mr. Johnson said he had never seen a queen like her.

He boils his waste combs in a big tank. When cold he dumps the whole on the ground and throws the chunks of wax, dead bees, and slumgum into gunny sacks and keeps these in the shade of a tree until the season is over; then he renders all in proper manner, using the wax-press. He says the bees don't disturb the dirty cakes in the sacks.

He put up arguments for the eight-frame hives that were unanswerable by an amateur like myself. His record for last year for 250 colonies was between 11,000 and 12,000 lbs. of honey, 5200 lbs. of which was bucket honey, composed of chunk and extracted. His comb honey was all sold to a shipper from California. The bucket honey was shipped to Portland, Oregon, and peddled out; prices were in the neighborhood of 12½ cents a pound all around.

I was very much interested in a device of Mr. Johnson's own invention. He calls

it an "Indicator." With the compass he draws a circle two inches in diameter on the back end of each hive. Through the center he draws a perpendicular and a horizontal line. At the intersection of these lines with the circumference, and also half way between said intersections he drives tacks, eight in all. This forms a kind of dial. For a hand he uses a piece of soft galvanized wire, No. 12. He bends a loop on the end of the wire by means of two headless nails driven close together in the bench. Then after the bend he cuts the wire something near an inch long and fastens it in the



center of the circle with a ¾-inch screw, tightening just enough to remain set in any position. Then he makes an enlarged chart to hang in his workroom for reference. On this he writes at every tack a certain condition of colony. Beginning at the top, for instance, he will write "O. K.;" the next tack to the right will be "Diseased;" the next, "More room;" the next, "Queen-cell;" the next, "Weak;" the next, "Young queen;" the next, "Queenless;" the next, "Attention." For this device he claims the following advantages: 1. No book or pencil is required; tacks and circle can not be erased, and will show the same after the hive is painted. 2. It is not in the way in tiering up and shipping hives, even when the latter are taken apart and shipped in the flat. 3. Never wears out. 4. Cost for labor and material is only about three cents to the hive, and they can be made at home. 5. Can be used for any purpose, the chart being changed according to purpose or whim of the beekeeper, or for different seasons. In a large apiary, Mr. Johnson does each separate act on all hives before beginning the next act. For instance, he sets his compass and draws circles on all hives; then he returns and draws lines in all circles, then drives tacks in all; then fastens the wire indicators. I enclose an illustration of the device. Mr. Johnson says



Bottom-board with large screen-covered opening for providing additional ventilation in winter.

he has tried every thing, and likes this best of all. In use, he makes periodical inspections of his apiary, setting the "indicator" on each hive to show the condition inside. At the end he has only to pass through and supply the needs of each, having no concern for those indicated "O. K.;" and no hunting for records.

I was with Mr. and Mrs. Johnson from 4 P. M. till 2:30 P. M. the next day. They made every moment a delight. They are good Baptists, and spirited, whole-hearted people. Mr. Johnson says he will clear the Payette Valley of foul brood. They drove me in their auto to Fruitland for the evening train. As I sat by the car window and watched the panorama of field and orchard and canal and river and mountain rush by me I felt that God is good and life is sweet, and I had received almost a college education in beekeeping.

Emmett, Idaho.

WINTERING OUT OF DOORS WITH A SCREEN-COVERED OPENING IN THE BOTTOM-BOARD

BY J. W. NICHOLS

I was pleased with the quotation from Mr. Zander, page 204, April 1, as it was in the line I have been working for four years. The winter of 1909 I wintered a stand of bees in a hive with an opening in the bottom 6 inches by 12, covered with wire screen (as shown in the photograph taken the next spring); and as they wintered so nice-

ly, and did so well thereafter, I have used more of them each year since, until now I use no other; and the past winter I lost no bees, and they wintered on their summer stands with no other protection than a thin burlap on the top of the frame, and the super filled with crushed newspapers.

My hive, as you will see, has eight Langstroth frames, with a dead-air space on both sides, and half way down on the ends and rabbeted over the bottom at the sides. The entrance to the body is $\frac{3}{8}$ by 8 inches, with an entrance for the honey-flow, closed at other times, at the top of the frame $\frac{3}{8}$ inch by 2 inches. The super holds 35 sections, and is rabbeted over the body at the sides, and one super rabbets over the other. The top is 3 inches deep, with ventilators, and is rabbeted sides and ends to fit the super or the body. The roof is of $\frac{3}{8}$ -inch lumber covered with ducking, and painted. This roof is cool, never warps nor leaks, and my bees never hang out in summer, and seldom swarm.

TRAPPING HAWKS.

On page 242, under the head of "counting chickens before hatched," I notice the trouble with hawks. There is an old but successful way to trap a hawk. A hawk, before attempting a catch (as a rule), and always after an unsuccessful attempt to catch, seeks a point of observation. A very attractive one is a post in the fence higher than the others, or, better still, a single post in an open field a little distance from the fowl. We use a post as high as we can reach the top while standing on the ground,

and set a small steel trap on the post with a chain long enough so that it will staple to the post below the center so that, when the hawk alights in the trap, he will reach the ground and not tear loose from the trap, if he is caught by only one toe, which is often the case. The hawk, while shy of a gun, and wise in some things, looks not to his feet, and a trap set on a post needs no covering and no bait. The only objection is that we sometimes catch a useful bird that should not be caught; but we excuse ourselves by saying that one hawk in his lifetime will catch many such birds, and chicks and fowls that should not be caught.

Dayton, Ohio.

TO PREVENT ROBBERING WHEN FEEDING

BY DR. C. C. MILLER

A Virginia correspondent has trouble with robbing, and asks advice. He started feeding with the Boardman feeder, and when robbing began he stopped it by putting wet hay over the entrance. "Then," he says, "I ordered some division-board feeders and tried them, and every time I feed them they seem to go crazy and want to rob, and the combs melted down in one of my hives, and they got hold of some of the honey and started to rob worse than ever. I tried putting hay over the entrance, but it didn't do any good. Then I tried putting them in the cellar, and that didn't do any good. Then I piled hay all round the hives, and kept it wet for a good while, and they robbed through the hay. The strongest colonies make no attempt at defense at all, but the weaker ones will catch a robber every now and then, and give him a little roll. This is my first year at bee-keeping. I have eight colonies, and would like to save them if I can. How can I feed without starting robbing?"

That's quite a graphic account of a bad case of robbing, and will appeal to many an old beekeeper who has been through the mill himself. Only it's out of the ordinary that the weaker colonies make more attempt at defense than the stronger ones.

"An ounce of prevention is worth more than a pound of cure" is a proverb that applies especially to a case of robbing. Bees have no morals to speak of, and every bee is a potential robber. Most of them never find out that they *can* rob; but let a bee once get into its little noddle the knowledge that there is such a thing as getting in another hive stores piled up ready to hand, and it will risk—yes, and lose—its life in the nefarious business of robbing—nefari-

ous from the standpoint of the beekeeper, although not from that of the bee.

It's too late now to say just what should have been done, but it may do some good for the future, although one can only guess at some of the things you did or did not do. It would have been a little safer if you had used a Miller feeder. Being on top it does not present so strong a temptation to robbers as a feeder at the entrance or in the brood-chamber. Besides, it allows you to feed up more rapidly for winter.

It is safer to feed in the evening, after bees have stopped flying. By the time bees fly next morning the excitement will have died down, there will be less to attract robbers, and the bees will be in better condition to defend themselves; for when feed is first given to bees, they become excited over it, and seem to feel—at least sometimes—that when sweets are so very abundant there's no use to be mean about it, and so they allow free entrance to outsiders.

The wet-hay business is usually quite effective if begun early enough and the hay made wet enough. Possibly you failed on the latter point.

Putting the attacked bees in the cellar may do little or much good, according to management. If you merely took the bees into the cellar and then took them back again after a day or more, the gain is very doubtful. For when the robbers find the hive missing, they think they've made some mistake as to the location of their prey, and pounce upon one or other of the neighboring hives, merely transferring their activities there. Even if they should be driven out of these, when the cellared hive is returned to its place the change is quickly noticed by the robbers, and they renew the attack with vigor. So you must try to fool the bees. When you put the hives into the cellar, don't leave the stand vacant, but set on it another hive just like the removed hive in appearance, and in this hive let there be one or more empty combs, or combs with a very little honey. Then, instead of pouncing upon neighboring colonies, the robbers will continue their attention to this substitute hive; and after having cleaned the little honey there, if you have left any, they will become convinced there is no more booty to be had there, and will leave the hive. After they have given up their visits to the hive entirely, you may then return the colony from the cellar, in the evening, hoping that the robbers will not discover that the empty one is not still there. It may do some good to paint about the entrance with carbolic acid. Indeed, the carbolic acid alone will be a sufficient protection against robbing if it has not proceeded too far.



G. Frank Pease, of Marshall, Mich., with a load of honey, vegetables, etc., to take to the fair.

It is pretty generally agreed that it is well to make the entrance pretty small when robbing threatens or occurs, thus making it easier for the guards to protect it.

You have probably desisted from feeding now, for a time, and that is wise. When you begin again, if you have no Miller feeders you might use the crock-and-plate plan given in the book "Forty Years among the Bees" that you have. If there is danger of the weaker colonies being robbed when being fed, you could feed to the strong ones enough to have them fill some extra combs, and then give these combs to the weaker colonies.

Marengo, Ill.

MOVING AN EXHIBIT 50 MILES TO A FAIR BY AUTOMOBILE

BY G. FRANK PEASE

I am sending some pictures showing a load for the Kalamazoo fair. The load consisted of 800 lbs. of honey and bees, grain, vegetables, and fruit—about 1600 lbs. in all. The load was taken fifty miles and back. There was a heavy rain the night before I went, and the road was full of

chuck holes; but I made the trip both ways without accident.

Fig. 3 shows a part of the load as it was in the exhibit, on which I won all firsts.

My car is a Reo the Fifth. I have run it over 2300 miles, and it never has been out of commission except to change tires from puncture several times, which takes from ten to twenty minutes.

Marshall, Mich.

BEE PARALYSIS OR POISONING?

Heavy Losses in a California Apiary from a Peculiar Malady

BY S. A. NIVER

Aug. 1, p. 547, under the heading "A Peculiar Malady or Disease." Mr. S. Fred Webber, of Colorado Springs, Col., writes a description of a condition in his apiary that makes me sit up and take notice. In a footnote the editor asks for explanations. I rise to remark, "Here too."

We have had two seasons' experience with something of that character, and it is a serious affair in this locality. From all indications and circumstances we had about concluded to lay it at the door of some local poison, and had pitched upon the buckeye as the disturbing cause. A hot wave blasted the bloom about that time, and bees were found dead, clinging to the blossoms as they sometimes are upon milkweed.

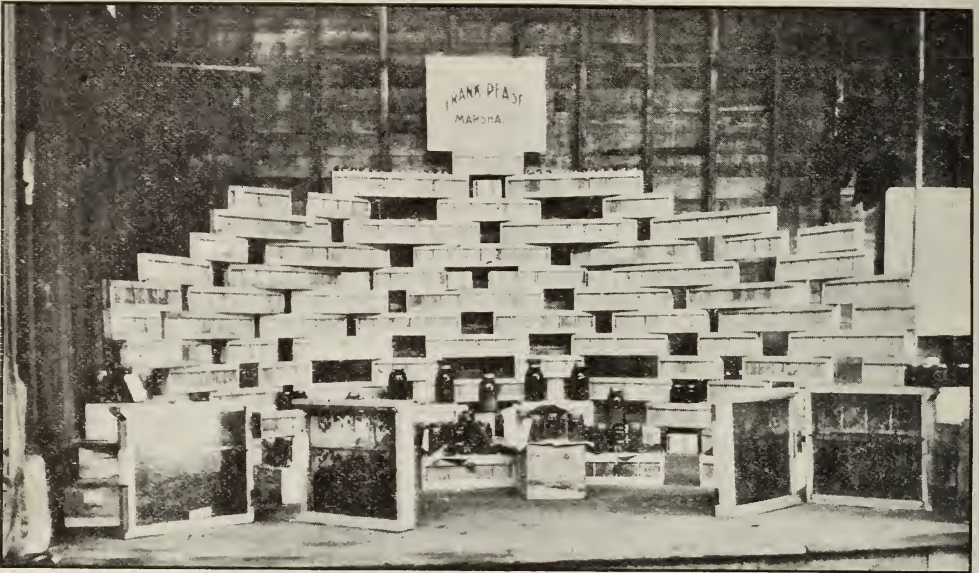
That was last season—1912. It killed over half of our bees, and was particularly fatal to young queens. We lost over 400.

This season (1913) has been another dry one, and we were on the watch for trouble, which came without any blasted buckeye, or at any rate came before that bloom showed any signs of being hurt by heat or any thing else; so our conclusions of last year seemed to need revising. Besides, a new symptom appeared, or was unnoticed last year. The young bees hatched prematurely, and without wings. They would dig out of the cells in a natural manner—little white fuzzy things, get one sip of honey, and make for the boneyard.

The old bees would come out of the hive at any time of day, keel over on their backs, claw frantically at their tongues, and keep pulling them out in an astonishing way until one would wonder where they concealed such a long big curved spike before the trouble commenced. That tongue was half as long as the bee; but, once clawed out, the bees were unable to get it back again, and died. Some colonies and some yards were worse than others.



A truck load in a touring car.



The exhibit of G. Frank Pease as it appeared at the Kalamazoo fair.

I sent some of the specimens to Dr. Phillips, who replied, "No bacteria; know nothing about it," or words to that effect.

Now, Mr. Editor, if it was poisonous honey that killed the bees, old or young, worker or queen, what ailed the youngsters, sealed in their cells, before the poison showed up? Why their winglessness or "this thushness," as Artemus Ward used to put it?

There was no particular odor noticed until the dead bees began to decay; and as the malady subsided in about a month we concluded to say nothing about it, hoping it would prove only local, and due to the drouth, which would not occur next year when the big rain came. (Those big rains are all next year here in California, you know.)

Then here comes in that Mr. Webber, from Colorado, with his experience along the same line, and away goes our theory of the trouble being local and temporary.

Brother Webber, is there any buckeye, blasted or otherwise, in your locality?

Now turn over the page and read what C. W. Arnett says, p. 548, about losing colony odor, due (I guess) to Himalaya blackberry bloom. It is the same here, with not a blackberry; but the results! When all bees have the same colony odor, and no guard bee knows friend from foe, absolutely refusing to put up a scrap to defend stores, it puts things "on the blink." It becomes a go-as-you-please race, when bees rob indiscriminately, regardless of "race, color, or previous condition of servitude." In one instance some goldens were lugging

the honey from two hives of hybrids, and the gray Carniolans taking it from the goldens. A robber seemed just as welcome as the rightful inhabitant; and a colony robbed out completely would show up strong in bees, with a good queen and nice brood, but not a drop of honey.

This state of affairs has kept us on the jump, night and day, for a month; and the description of the schemes we have tried would be too long for GLEANINGS, so I will simmer down to the finale, which was to scatter them out over 25 miles of territory, and keep moving the robbers and feeding the destitute. My partner reports a few cases where guards are putting up a fight, so there may come a let-up eventually.

What do you think of bees, shut up tightly in their hives, passing stores through the ventilator wire cloth to robbers on the outside? Our loss to date is just about 50 per cent from malady and robbing.

Jamesburg, Cal., Aug. 25.

[We are at a loss to explain what may be the cause of this peculiar malady. We might suggest poison of some sort as being responsible; but that hardly seems tenable in view of all the facts presented. No particular source of honey can be ascribed to it. We shall be glad to hear from more of our subscribers who may have observed something similar in their respective localities. If it is a new disease or malady, and if it be seriously contagious, we ought to take a stitch in time. We feel satisfied that Dr. Phillips, at the Bureau of Entomology, will

be glad to do any thing he can, and we suggest that all specimens of diseased bees be sent to Dr. E. F. Phillips, Bureau of Entomology, Washington, with a detailed description of all the symptoms.—Ed.]

LOCALITY AND HIVES

The Danzenbaker a High-pressure Hive

BY W. O. ROUDABUSH

I read with much interest the article on page 699, Nov. 1, 1912, by C. A. Stevens, on "How Locality Affects the Question of the Choice of Hives." I don't know that I would have had more than passing interest in this communication if his experience had not been given with Danzenbaker hives. In my imagination I can see Mr. Stevens with a woe-begone expression on his face when he lost virtually all his bees the first winter. It is no small wonder to me that he ever put more bees in Danzenbaker hives: but he seems to be a "sticker;" and as stickers are the only ones who will win out with any hive, I take off my hat to Mr. Stevens.

I have used the Danzenbaker hives for about ten years. Prior to this I kept bees in the old beveled-edge Simplicity hives. Then the ten-frame dovetailed, and later the eight-frame dovetailed hives; and from what experience I have had with the Danzenbaker hives I would say that location may have something to do with the question of success; but management has a great deal more. The Danzenbaker hive is adapted ideally, I think, to what I would term high-pressure beekeeping. High pressure in bee culture, as in any other vocation or business, calls for constant attention to details. With a hive the brood-frames of which are only $7\frac{1}{2}$ inches deep, and a good prolific queen to keep the brood-chamber full of brood during the honey-flow, one has the best combination I know of for the production of fancy comb honey.

Comb-honey production, after all, is nothing more nor less than crowding the bees to store this honey where we want it—in the supers. With the Danzenbaker hives I have had as many as eight frames of brood solid from top to bottom, clear out to the end-bars—a thing I never could accomplish with any other hive except once in a while with an extra good queen—say one in a hundred; and at the end of the honey-flow, after removing the supers, I have had colonies that had given me over 100 lbs. of strictly fancy honey that would die of starvation in one week on what stores were left in the brood-chamber if left to their own

devices. This is why I call it high-pressure beekeeping.

In the hands of an industrious, experienced beekeeper, one who has a system and follows this system to the letter, never waiting to do to-morrow what ought to be done to-day, and who may wish to work his bees for all they will do, I don't think a better hive than the Danzenbaker can be found. On the other hand, with the man with no system, who puts colonies out to "go it," is usually rewarded by seeing them go away and never return.

With plenty of stores of sugar syrup which costs me about four cents per pound, and which I trade to the bees for 15-cent honey, I never had any trouble in wintering my bees in Danzenbaker hives on summer stands; and when it comes to building up in the spring, I think this hive is far ahead of any other I have ever used.

I have seen some writers in the bee-journals complaining of the difficulty they experienced in handling the closed-end frames of the Danzenbaker. This frame-handling also comes under the head of "Know how." Several years ago I bought some queens of a neighbor who was kind enough to see that they were safely introduced. He is an experienced beeman, and no tenderfoot in the business, and after opening a hive and having several frames upset he looked at me and said, "If I had to keep bees in such hives I would lose my interest in the business." After showing him how the frames were handled he said nothing more to me about it. He came one day when I was away from home to see if the queens were laying, and told Mrs. R. he believed he could learn to like the hive very well. In August of that year I had ten new Danzenbaker hives set up that I had no immediate use for. My neighbor came to me and said if I would let him have those ten hives he would transfer some bees into them that were in hives that, through age, had given out. The next spring he transferred 60 colonies to Danzenbaker hives, and likes them better than the ones he previously used; so in this it is to understand first the hive. I can handle Danzenbaker frames faster than than I can handle the hanging frames, because I can handle them in twos, threes, and fours, and never kill more bees than with the open-end hanging frames.

After taking all the honey the bees have been able to make, if one will see that they are well supplied with stores for winter, and will understand that the object of the inventor was to use a frame so shallow that it would force the honey into the supers, and learn to use the closed-end frames properly, I consider the Danzenbaker hive

the best one for fancy comb honey in use to-day; but to attain success one must be always on his job.

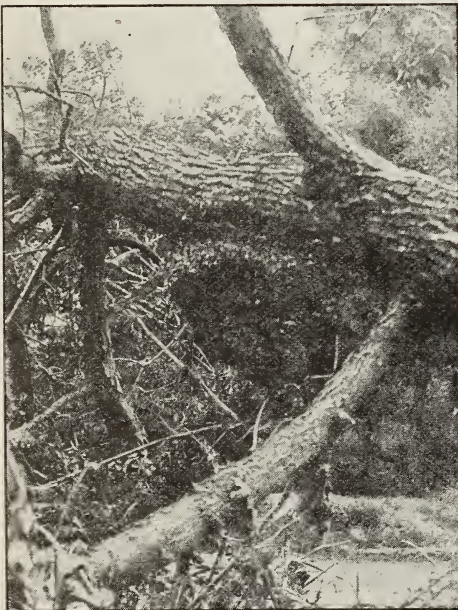
As to the claim made by some that bees in Danzenbaker hives will swarm more than in some other hives, I have found by experience that, when the conditions are right for swarming, they will swarm from any hive unless prevented from doing so by some interference from the beekeeper; but I see that they swarm only a little more from Danzenbaker hives than other hives. I confess that, as a general rule, crowding will produce swarming, and the smaller the hive the more crowding can be done, and the more the bees feel the need of more room.

Hagerstown, Md.

AN OUTDOOR COLONY

BY C. E. BARTHOLOMEW

The accompanying picture shows a swarm of bees that chose the under side of a fallen elm tree upon which to establish their home. This was a large colony, and when found had built out nearly as much comb as would be required in the brood-chamber of an eight-frame hive. The most peculiar thing about this colony was that the brood (and there was a large amount of it at the time the colony was taken) was nearly all on the outside of the outside combs. There



A colony that built combs out of doors. Nearly all of the brood was in the outside combs, the honey being in the inside.

was several pounds of honey stored in the inner combs. This colony was taken August 4, and has now settled down to work in a ten-frame hive. The photograph shows the side view of the combs as the bees clustered upon them. This is the third time I have observed comb-building in the open; but this is the first instance where they were caught while at work.

Ames, Iowa, Aug. 15.

A CAUTION AGAINST SOME METHODS OF DIRECT INTRODUCTION

BY J. C. MOSGROVE

Opinions on direct introduction vary among beekeepers as much as the temperaments of the different races vary among the bees. I am not picking for a scrap, but I am *not* in favor of using smoke when running in a queen, for this reason: If it is at a time when there is a dearth of honey the colony will be demoralized to such an extent that it falls an easy victim to robbers, or the smoke may cause the bees to fall upon the queen and kill her.

I am in favor of placing the queen close to the entrance and letting her slip quietly in without any commotion whatever. I practice this method, and I get very good results. But for beginners and all amateurs I would advise the use of a Miller cage. This cage is best, too, for introducing a queen from the mails.

In regard to odor I shall not argue that point; but this I will mention: Mr. Miller states that in an apiary of thirty odd colonies there were three distinct strains of Italians and one of blacks; and as the honey-flow was extremely light until the middle of July, an examination of the colonies showed very few bees in them that were not raised there. Directly following there was a heavy flow from caletbra, and within a week every colony had a considerable part of its population made up of all the different strains. He asks, "Had the bees' sense of smell gone wrong?" No, I don't think so, and odor had nothing to do with it either, because a bee coming from the fields heavily laden with honey or pollen, alighting in front of a hive other than its own, may crawl unmolested within. Why? Because a laden bee going into a strange hive is not looked upon by the inmates as a thief or an interloper, for it brings its burden to add to the store, and is not trying to pilfer the fruits of another's labor. On the other hand, just let an empty bee go buzzing around a strange hive. What is the result? In plain English, she is very promptly "kicked out."

As to closing the entrance of the hive and pounding on it with the fist, that may at times prove disastrous. I have resorted to this to cause the bees to fill themselves with honey before shaking into the grafting-box, and found the queen badly balled. This taught me a lesson. Now I always find the queen and set the frame she was on in a safe place to one side before pounding on the hive; then after shaking what bees I want I hang the frame back in the hive with safety, as the bees on the frame with the queen have not been unduly excited, and those in the hive have filled themselves with honey until they have become logy and have no fight left in them.

Medina, Ohio.

ROUTING OUT THE BUMBLEBEES

BY MRS. S. L. DORSETT

As I have not noticed in GLEANINGS any thing in reference to the bumble-bee I thought your readers might be interested in a bumble-bees' nest that was found on our premises last week, a photo of which I inclose herewith. These bumble-bees are the black-headed kind, the kind that sting so viciously. These bees had built 75 large cells and 25 smaller cells directly on a board shelf in a building in which grain and feed were kept, ingress and egress being made through a window. At first only one or two large bees were seen at a time, and nothing was thought of their presence except that they came a little too near sometimes when one went inside the building; but in the course of three weeks, as nearly as we can tell, these bees became so cross that it took a brave one to enter the building, for they would circle around one's head and throw off a rank odor, making it very plain that they were ready to fight to defend their young.

It became necessary to get rid of these troublesome intruders, hence a well-filled smoker was lighted, and two people, well protected with gloves and veils, entered the building. After filling the air with smoke, as much as one could stand to remain inside the building and work, the material on the shelf was cautiously removed, and there, directly on the bare boards, were a hundred beautiful cells. Over the top of these cells was a layer of bits of rags and waste, just such as a mouse would use for a nest, but it was woven together much better than a mouse-nest. It was more as a bird would build a nest, only it was put over the cells covering them completely except one opening just large enough for one bee to pass in



A bumble-bees' nest built inside a coil of rope.

and out. The whole nest was about as large around as a table saucer, and four inches high. Twenty of the cells had hatched, and in their cells was found some rank-smelling honey. The newly hatched bees were in the vacant space up over the hatching cells. The nest as shown was built in the center of a coil of rope, and in shape it very much resembled the old-fashioned straw hive.

West Point Pleasant, N. J.

CARNIOLANS AND THEIR CROSSES

BY SAMUEL SIMMINS

In a recent issue information is asked for regarding Carniolans superseding queens, swarming, etc.

Ever since Mr. Benton first offered these queens and bees I have continued to import both queens and stocks down to the present time from the native breeders. I have at times imported original stocks in the original long flat hives in which the combs travel well, without breaking, as a rule. My last consignment of this kind came to hand in early June of 1911. It was chilly for the time of the year, and the bees were as silent as death upon arrival, being all but starved through the stores not holding out.

But these Carniolans, while naturally quiet under confinement, always travel well, for the reason that our Carniolan friends have learned that young bees travel safely (with combs) almost any distance if they have just enough food, which is not always the case. The old bees are disposed of by moving the hives to a fresh stand a few

days before packing for export. Thus one has a good foundation of all young bees to start on when they are transferred to frame hives.

As usual the stocks referred to were transferred by first removing the top board, to which the combs are attached. These, with the mass of bees covering them, are then turned over, when, beginning with a side comb, each is gently sliced off, and the bees shaken into the permanent hive prepared for them close by. Very little smoke is required; and as a rule one may thus transfer ten or a dozen lots without getting a single sting.

With bees imported early in the season the queens are of the previous year; but I do not find these bees any more given to swarming than imported Italians, nor are they likely to supersede the queens more than such Italians are known to do.

During 1911 we had a particularly long fine period after a cool spring, and the several imported stocks I retained stood the whole summer without swarming; and even though I cut out no queen-cells they became very populous, and none of the queens were superseded.

But now I must mention a strange peculiarity found with these bees. They go and come rapidly in large numbers all day long, but the work done is not commensurate with their apparent activity, and they do not store as heavily as my line-bred Italians, which come home more slowly and drop heavily on the alighting-board with their bodies distended with the weight of honey carried. Pure Carniolans do not carry such loads, and, like pure Cyprians or Syrians, appear *unable* to load up so heavily.

As each of these three races is invaluable for crossing, producing bees that will store heavily in some localities where imported Italians are quite useless, they should not be hastily condemned because of their apparent inferiority as pure races.

Carniolans crossed with our natives produce workers that yield large crops of honey; but the temper of the bees is somewhat troublesome. They are, however, not so unmanageable as Cyprians or Syrians when crossed with blacks.

Carniolans mated to imported Italian drones are of little value. Such Italians crossed with Carniolan drones are more useful, and the workers are superior to either race pure.

Cyprian and Syrian queens mated to Carniolan drones throw workers that are good-tempered and very strong workers, but are even better when crossed with a good strain of Italians.

It may be taken for granted that Cyprians mated to a suitable strain of Italians will produce bees of more general utility than any other strain of Carniolans or Italians, pure or hybridized. Syrians do not lose their bad temper through several crosses; but it is a strange fact that Cyprians of the first cross to an Italian drone of a good-tempered strain will show workers which are more gentle than any pure Carniolans or Italians known. I can vouch for this from many years' experience in crossing these bees; and I am not in the least surprised that Mr. Burrows has recently been under the impression he has found a stingless bee. Personally I do not remember ever being stung by any bee of the most populous hive containing this Cyprian cross with Italians, whether in the warm or cool season; and as to wintering, they are at all times bright, slim, and active, rarely or never showing that somewhat bloated appearance found with some Italians and their hybrids when long confined.

For comb-honey production it would be better to cross Cyprians with Carniolan drones, but for heavier results with good Italian drones.

With over thirty years' experience with Cyprian bees and their crosses I have so far found none with disease of any kind. Italians are more immune than natives to both brood diseases and paralysis; and somewhere about the year 1906 in articles of mine published in GLEANINGS I showed how Italians were able to overcome brood diseases better than blacks. I also included Carniolans as being able to keep such diseases at bay.

Mr. Frank Benton declared that no foul brood was known in the locality from which Carniolans are imported; and in your journal for April 1, 1911, p. 203, you will find Carniolans placed ahead of Italians; as Mr. J. T. Dunn says, "Carniolans would withstand this disease when Italians in the same apiary were infected and reinfected." Possibly these Italians may have been somewhat inbred, as usually they do not readily give way to disease.

Heathfield, Sussex, Eng., Dec. 26.

MORE COMB HONEY AND LESS OF EXTRACTED

Importance of Proper Packing of Comb Honey; Conditions in the West

BY M. A. GILL

You have been advocating in time past the production of comb instead of so much extracted honey. Mr. Root, you stand in a position to wield a great influence; and you,

together with that prince of good fellows, and a very dear friend of mine, W. Z. Hutchinson, have in the past rather favored the production of extracted honey. I know nothing of the conditions in the East; but I do not think there has been the deflection from the one branch of the business to the other that you think. Take California, Colorado, Idaho, and Utah. Outside of California, where there has been a little falling off in the production of comb honey in the past few years, I think there has been a gain in the other States in the tendency to raise comb honey; and the fact that less honey has gone forward is because of the poor seasons rather than a changing to extracted honey.

You strike the keynote when you speak of the miserable handling of a part of the comb honey offered to the market. Now, if a campaign is to be started urging the production of more comb honey, let's first start a school urging the placing of a better grade on the market.

It matters not how slipshod the methods are that produce a can of extracted honey. If it is ripened, settled, or properly strained, it's all right for the market; and any one who can turn a grindstone can produce extracted honey, whether at a profit or not. But the man who is to place a case of comb honey on the market must cater to the appetite of the eye, for he is dealing with an epicure—one who is buying a luxury; and he must strive to excel by, first, honesty of weight; second, quality; third, neatness of appearance; and he who meets the above requirements must be a man of pride for and taste in his work. If the advice to produce more comb honey were taken in many cases, where the extracted apiaries have been run with hired help, schooled only in the rough methods by which a crop of extracted honey is obtained, in many cases the product would be no better (perhaps worse) than now. Then let them go on and produce the excess (if there is to be any) in the extracted form, for it is much more capable of being worked off than an excess crop of comb honey, whether in good or bad shape; for we must never lose sight of the fact that comb honey is a luxury, and luxuries must be neat and attractive to sell well.

Utah is just as good a honey country, and even better bee country, than Colorado; but its beemen sadly need the schooling that the Colorado comb-honey men have had for the past fifteen years. Utah's comb-honey men need to get together and school themselves, using the motto "The best is none too good," which will remove the low price and bad name that now hangs over us, for no better

can be produced anywhere; and I certainly felt flattered this fall when I read in a paper an account of a carload of comb honey that I had sold to an eastern buyer. He said that he had bought from me the best-handled car of honey he had bought in an experience of twenty years.

I am not one of those who think that more bees can be handled for extracted than comb honey, after having had nearly twenty years' experience with each; neither do I think that the production of extracted is more profitable when we take a term of years and take into consideration the condition of the capital stock.

If you would travel over the country and see the outfits that some people are using, and see the "fool supers" in which it is impossible to produce a first quality, you would be surprised. This, of course, is on account of the "penny wise and pound foolish" plan of saving a nickel rather than use standard supplies.

In conclusion, I will say, as one who has been in the comb-honey business exclusively for twenty years, waiting for the time when quality would be appreciated, that, if a crusade is to be started inducing more people to raise comb honey, we should use my old class motto at school: "Not how much, but how well."

Hyrum, Utah.

QUEENS INJURED BY BEING SENT THROUGH THE MAILS

Number of Queens Shipped in a Nucleus

BY LOUIS MACEY

While the mailing-cages in use at the present time are cheap, simple, and convenient, and many queens "go through safely" in them, usually arriving in apparently good condition, it is universally conceded that a queen which is sent in this way through the mails very seldom arrives in normal condition. Conditions are not most favorable, therefore, to her passing muster with the strange bees and with her new owner. Never in all her life is a queen subject to such critical inspection as when introduced. The biped inspector has only two eyes, and a much less critical "smelling apparatus;" but his criticisms do not end with the first day, nor with the first week. Even after two or three weeks of prying into her work he is still in good position to "make a kick."

Everybody admits that the queen is strange to the bees and in an abnormal condition as to nerves, because she is so tired and frightened that she is in poor condition to maintain that queenly dignity so neces-

sary to the morals of the colony. But it must also be admitted that such a queen taken in the flush of her egg-laying, and confined with only five or six of her subjects, with no chance to lay, and subject to "rough handling and to being chilled in the mails," is in very poor condition all around to resume her normal rate of egg-laying so as to satisfy her most critical judge—the man who paid for her, and naturally expects something. Some queens die in transit. Others, while they pull through alive and in apparently good condition, have been rendered practically worthless by the hardships of the trip. Numerous instances have been cited of good queens starting, which, after arrival, became drone-layers.

Would it be going too far to say that few queens going 300 miles or more ever regain their normal usefulness? If they are good ones, and regain within 10 or even 20 per cent of their normal efficiency, it might not be noticed, and they would still be classed as good. Nevertheless, the loss would be there, and would be felt by the breeder as well as the buyer. Northern beemen recognize the desirability of getting early queens from the South. Southern queen-breeders would like to sell more queens, so it seems to me that one of the biggest problems before us is to minimize the chances of injury, or, in other words, to provide such conditions as will keep the queen as nearly normal as possible while in transit. Shipping in nuclei does this; but the expense is too great for one queen.

I have an idea. It may be old, and it may have been tried before; but in the five years I have been reading bee lore, I have never seen any mention of my plan. Breeders advise shipping \$5.00 and \$10.00 queens in nuclei, but say nothing about shipping five or ten \$1.00 queens in a nucleus. Why not? Beekeepers can not afford the transportation charges on a nucleus with one \$1.00 or even \$2.00 queen; but they could if it contained ten or twenty queens, all safely protected from rough handling and chilling by the same bunch of bees. Do not call me a fool yet. Of course I don't mean to turn ten or twenty queens loose in a nucleus; but when breeders raise twenty or more queens to mating age in one frame, why should they not be able to ship the same number in a modification of the same frame with a warm living wall of bees on each side? With cages placed back to back, something like 50 could be placed in the middle frame of a nucleus; and if there would be danger of the outside bees pulling the queen's legs off, use a finer-meshed screen.

Suppose I want 16 queens next spring, and I want them to come through from

Texas, and I want them to come through not only alive but in a condition as nearly normal as possible. What is to prevent the breeder from taking some unfinished sections, putting candy in one corner, a sponge filled with water in another, tacking wire gauze on each side, pouring in a handful of bees and a queen and then fitting the whole 16 sections of baby nuclei in a special frame, and putting this between two frames of brood and bees in a nucleus box? While he was about it he could partition the box with screen each side of the middle frame, and put a queen with the bees in the two outside frames. That would make 18 queens, and each one protected from rough handling and chilling, and with some natural comb to crawl over, cling to, and perhaps lay in. Why not?

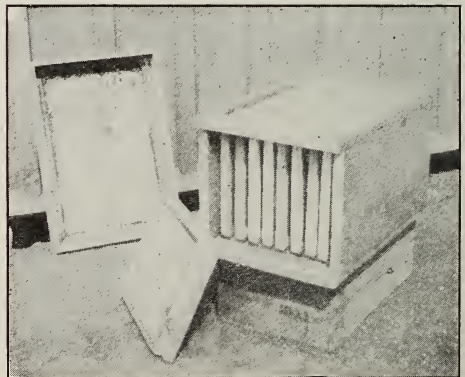
Still another: While E. R. is experimenting with pound and half-pound packages of bees, why not try sending a queen in with them? When one needs queens, a few pounds of bees would never come amiss. If a single package will go safely, wouldn't six, eight, or a dozen—isolated or not from one another with cardboard if necessary—hold heat and go together in one package all the better?

North Platte, Neb.

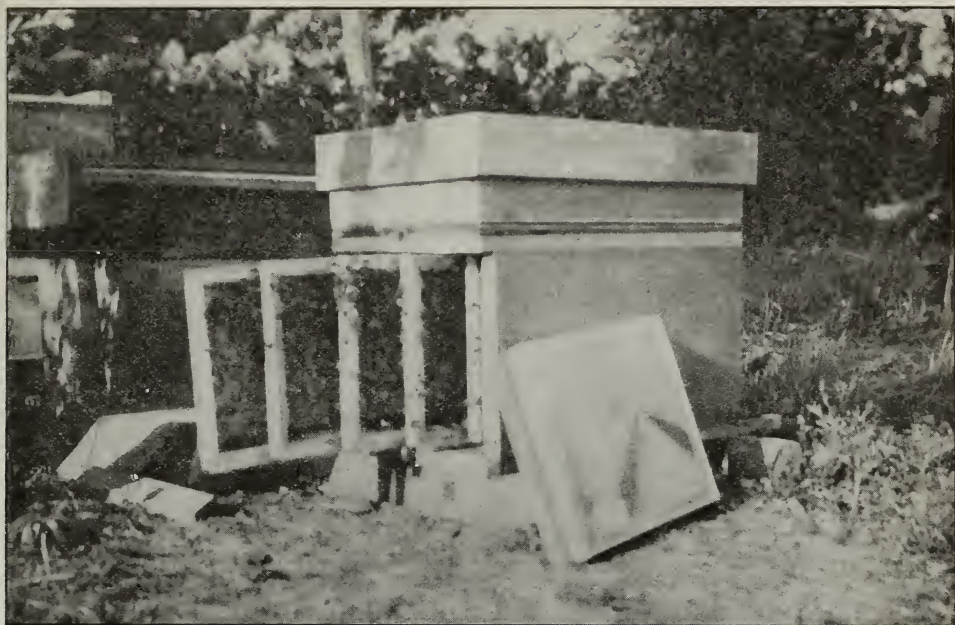
A HIVE HAVING AN OPEN BACK THROUGH WHICH TO DRAW THE FRAMES

BY GEORGE T. WHITTEN

- The pictures show my new general-purpose hive, before and after the bees were put in. It is 20 inches long, 13½ wide, and 12 high. It takes the regular eight-frame super or hive-body on top. The frames work on the same principle as those in the observatory hive, and are shorter and higher



George T. Whitten's hive made on the Prokopovitch principle of removing combs through an open back instead of at the top.



Some of the combs pulled out to show ease of examination when supers are on top.

than the Hoffman frames to fit this hive. The front bars of the frames are one inch wide to prevent the bees from building comb on the sides or between them. The top and bottom of the hive are 20 inches long, and sides are $\frac{7}{8}$ shorter. The back or door is of double boards. The inside one shuts inside the hive-body, has tins around the edge to prevent the bees getting at the boards to stick them together, and to force them away when closing the hive. This works perfectly, and does not crush a single bee. To look them over, the supers do not have to be touched. This does not disturb the bees at all in their work. I can examine them in a few minutes, and it is a pleasure to do so.

Hartford, Ct.

[We will explain that Professor Whitten, of the Handicraft Schools, Hartford, Ct., is the inventor of an observatory hive which he exhibited at the convention held at Amherst, Mass., early last summer. We hope to illustrate this soon in our columns. He has also devised a hive embodying the same principle for ordinary hives. The accompanying illustration will show the scheme. The top-bars and bottom-bars of the frames slide in metal channels in such a way that there is no chance for the bees to propolize. While it is possible for one to examine any comb in the hive without lifting off the supers, the arrangement, we fear, will not

prove to be very satisfactory as a permanent working hive run for regular honey production. This same principle was used by some of the early inventors, among them being the celebrated Prokopovitsch, in 1830. Baron Berlepsche, of Austria, used a hive something on the same principle, with this difference: The frames were moved from the end or side of the hive transversely. The principle shown in these illustrations has been used to a greater or less extent in Europe ever since. But it has never been used to a great extent by large commercial honey-producers. The main objection is that frames secured in a hive as here shown are all at fixed distances apart with no opportunity for spacing further apart. There is quite a tendency for bees to attach brace-combs during a heavy honey-flow, hence the combs will be bulged in a way that would make removal difficult and slow. This will result in killing bees by rolling them over and over as the frames are drawn out. With ordinary hives opening from the top with self-spacing frames, the removal of a division-board or a single frame leaves room for spacing the other combs further apart, so one can be easily lifted out.

Of course, there is the advantage that the brood-nest can be examined without removing the super. But in practical bee culture there is seldom any occasion for this.—Ep.]

HOW TO TAKE AN INVENTORY OF A BEE-YARD

Sending Honey by Parcel Post Not Satisfactory

BY H. G. BRANT

In taking inventory at the close of the season, what value should be placed on equipment in use—for instance, hives that are as good as new to the beekeeper, but are one or more seasons old?

What value should be placed on drawn comb, full colonies, etc.?

What form should the inventory take? So many bottom-boards, so many bodies, so many covers, so many frames, etc., at so much?

That the time is not yet ripe to ship honey through the mail by parcel post was well illustrated one day last week at the postoffice in this city where I am employed. A sack was dispatched at Tomah, Wis., containing a ten-pound friction-top pail of extracted honey. Heavy sacks of mail piled on the one in question caused the cover to spring, and the contents smeared all over the rest of the mail in the sack. The package has not been perfected which will permit the shipment of honey by parcel post. Also, except in the local, first, and second zones, the rates are too high to permit any profit if the honey is to be shipped in a satisfactory container. I handle only parcel post for eight hours every day, and see a great many queer packages; but the one last week is the first honey I have seen. Eggs in considerable quantities are received and shipped. These, however, are packed in six-slatted carriers with a handle like a pail. As a writer in a recent number of *GLEANINGS* said, "A basket or pail with a handle on that can not be thrown or laid on the side is best."

The fall flow this year was very poor, a dry spell at the close of the clover flow preventing secretion of nectar. The white clover was the best for several years. My colonies averaged 100 to 110 lbs., and one gave 48 lbs. in nine combs with wide spacing. This is the first season I have tried it; but all supers with nine combs spaced wide gave more honey than those with ten combs.

St. Paul, Minn.

[In order to get at the valuation of second-hand hives and parts of the same, it will be proper to start off with the cost of each item pailed and painted, and laid down at the apiary. The usual rule is to charge off 10 per cent a year on machinery and tools or appliances. It is generally considered that a tool, machine, or appliance will be worn out or become out of date in ten years. In figuring this we charge 10 per cent on

the first cost of the article every year. To be specific we will suppose that the hives in the yard have been used five years. Ordinarily we would write off 50 per cent; but as lumber has advanced in value so sharply during the past few years, a second-hand hive is beginning to be worth almost as much as a new one, if not quite. See what P. C. Chadwick says elsewhere in this issue, page 750. If a hive has been painted regularly, say once in two or three years, and on regular hive-stands so the bottom does not come in contact with the earth, it ought to be worth as much as a new one. As to the cost of the bees themselves, that will depend on their market value in the locality, whether they are pure Italian stock, pure Carniolan, or whether a mixture of several races.

In some parts of the country bees are in great demand, from the fact that a single colony will very frequently save its first cost in one season, and sometimes considerably more. In other localities, especially after a series of poor years, a colony of bees will bring only a nominal price.

There is another factor that must be considered in the cost of a colony, and that is the queen. A queen whose bees far excel any other bees in the yard in the production of honey may be worth far more than the average run of queens. It is not an uncommon occurrence for a beekeeper to say he would not take \$25.00 for a certain queen. A colony with such a queen would be obviously worth \$25.00 plus the value of the hive and bees. A colony with *daughters* from this queen will be worth more than colonies having ordinary queens.

Generally speaking, a colony of pure Italians in a new hive, of a good strain, will be worth anywhere from \$7.00 to \$10.00 in the early part of the season. After the crop has been secured, there will be a temporary depreciation of probably 50 per cent for the reason that their owner must feed them and assume the risk of wintering.

Another important factor in the valuation of a colony is the kind of frame and condition of the combs. If they are only one or two years old, well wired, in well-made factory frames, they are worth very much more than crooked combs in home-made frames. Good drawn combs one or two years old are worth anywhere from two to three times as much as new wired frames of foundation. The latter in a honey-flow do not begin to compare in value with drawn combs. While foundation can be drawn in from 24 to 48 hours, this drawing-out necessarily absorbs a large force of bees from the field, and of course this would mean a loss of honey. And this is not all. The foundation may discourage the bees

and cause them to swarm. This is the principal reason why producers of comb honey have more trouble from swarming than those who produce extracted honey. For that reason we place a higher value on drawn combs than is ordinarily set. They are in fact the best kind of property that the producer of extracted honey can own. If filled with pollen for early spring breeding they are worth as much as the same combs filled with honey or sugar syrup.

We do not think it would be necessary to apply the rule of 10 per cent depreciation on drawn combs; for if properly taken care of, and kept away from the moth miller, they ought to be good for 25 years. The depreciation, then, should not be more than 5 per cent a year; but in the hands of a careless beekeeper the depreciation charge might be nearer 25 or 50 per cent a year.

Your experience in sending honey by parcel post is in line with other reports we have received.—Ed.]

GREASY WASTE AS A SMOKER FUEL

Auto Trucks for Out-apiaries

BY R. V. COX

I notice there is some discussion about cotton waste. I never had a good chance to get this fuel till this year. Perhaps my bees had got used to rotten wood, and did not like the smell of the new smoke. This is a poor reason; but my bees certainly gave me all that was coming to me several times till I changed to the old fuel, and then they let go and were decent.

I remember your speaking of the automobile truck in *GLEANNINGS* as a light truck, 1000 lbs., I think. Do you draw the full supers of honey home on it and the empty ones back? If so, do you not have to make several trips a day with it?

I have had several poor(?) years here, and think of trying outyards and a truck. Sloansville, N. Y.

[We do not understand why your greasy waste should not give you just as effective service as that you could secure from rotten wood, corneobs, or any other material. In using fuel it is important to get it well ignited. We never saw a colony yet that we could not subdue with greasy waste. If the bellows is worked vigorously a few times, the smoke will roll out in a dense volume of a bluish-white color.

We have used an automobile truck for our out-apiary work during all the past season with great satisfaction. Our truck is capable of carrying 1200 lbs. at a load, at an average speed of fifteen to eighteen miles an hour, and is capable of a maximum of 22

miles an hour. It will do the work of two or three teams at less cost, and at the same time enable one to have his outyards placed far enough apart so the bees in their flight do not overlap each other. Some of our yards are over ten miles from the home yard; and yet at this distance we are rarely more than forty minutes on the road, even when loaded down.

We have had no engine trouble—in fact, no trouble of any sort. The truck has a friction drive capable of all speeds. We are thoroughly convinced that a truck with this kind of transmission is better for all kinds of roads, and certainly better for the average driver, than the sliding or planetary gear. Such gears are liable to be stripped, and, what is more, the sliding gears require a much greater degree of skill to operate. The friction drive on the other hand is very economical in that the wearing surfaces do not cost to exceed \$2.00 for renewal a season, and a broken sliding gear may cost anywhere from ten to one hundred dollars to replace. The machine we have driven with such satisfaction is the Commerce, manufactured at Detroit, and costing less than a thousand dollars, complete with top and storm aprons.

It has been our practice to carry full supers of filled combs from our extracting-yards to the home yard to extract, where we have our extracting-outfit, and then carry the empties back. As the truck can make quick and frequent trips, no single hive is deprived of its full quota of combs more than an hour or an hour and a half at a time. A large power extracting-outfit will just about keep up with the truck coming in with full combs, and returning with the empties. It goes clear into the apiaries, and up to the door of the extracting-house.

Again, an auto truck enables one to split his full number of colonies up into comparatively small apiaries. In this way overstocking is avoided. With a team of horses it is not practical to have a yard smaller than a hundred colonies nor further than two or three miles apart; but with a light automobile truck one can operate out-yards of thirty, forty, and even fifty colonies five and even ten miles apart. In a locality that is rather poor this is a great advantage. If a small beeyard can have all the nectar it can reach, the individual yield per colony will be relatively much larger.

We are well satisfied with our investment of the automobile truck; and we believe the day has already arrived when the beekeeper of 500 colonies will find it a saving over a team; and, if he owns one thousand or more colonies, an absolute necessity.—Ed.]

Heads of Grain from Different Fields

I am like the busy little bee
That works with all its might
To gather honey every day
And eat it up at night.

Rev. Wallace.

Combs Melting Down on Hot Days; the Remedy

I have lost an average of two full honeycombs per colony, besides some half a dozen colonies outright. Our summers are made of a variation of hot and cool spells. The north wind will blow for several days, running the thermometer up, oftentimes, to 112 degrees or more. Then, as a rule, the cool south wind springs up, and continues blowing until it feels quite cool.

Some of my hives are under large oaks in the best of shade, and some out on a glaring hillside. Of course those in the hot sun suffered most from the heat. My theory is that ventilation over the tops of the frames would prevent this loss, whether a hive were in the sun or shade. I propose taking a comb-honey super and tacking screen over the top and bottom, also over an inch hole bored in one end of the super, then place it between the cover and hive with the hole toward the west, away from all prevailing winds. Would this be sufficient protection to hives out in the sun?

VENTILATED ESCAPE-BOARDS.

The new bee-escape board, described on page 577, looks more practical. I have given the Porter bee-escape boards up. In hot weather I feared to use them, and in cool weather they would not free the supers of bees in two or three days. I have seen a La Reese bee-escape board advertised. Are they good?

In an ordinary year my bees gather honey more or less from February to October. The winters are open and mild, giving the bees opportunity to fly out nearly every day. How many full combs should a colony have to winter on?

HOW MANY POUNDS OF EXTRACTED HONEY CAN ONE TAKE WITH A TWO-FRAME COWAN EXTRACTOR?

Can you tell how many pounds of honey a man can extract in a day with a Cowan two-frame extractor? I can average only 500 pounds a day. I am one beekeeper who greatly appreciates the A. I. Root Co., and consider the knowledge gleaned from the A B C and X Y Z and from GLEANINGS worth hundreds of dollars to me.

West Butte, Cal., Aug. 24. R. A. WILBER.

[The remedy for combs melting down is to place all hives that are out in the hot sun under some kind of shade. This may be done by the use of shade-boards, or, better, by placing the hives in the first place in the shade of a small tree that will protect them during the hottest hours of the day. Additional ventilation will doubtless be good also. The scheme you propose would give no more ventilation than would be secured through a one-inch auger-hole, because the cover will fit down over the wire cloth of the super. Some beekeepers use the plan of giving ventilation through the upper back end of the hive. This may be done by putting on a rim or super having two or more holes at the back end. These may or may not be covered with wire cloth. A strong colony will guard these holes the same as they would an entrance. Another scheme is to tilt the cover back a little—just enough to give ventilation at the front and back. We do not think you need to have any trouble from combs melting down if you put the hives in the shade and then give ventilation at the top and a large entrance at the bottom.]

One man working alone may be able to take as much as 1000 lbs. of extracted honey a day with a two-frame Cowan extractor providing all conditions are favorable; but as a rule the general average will not be much if any higher than you have been able

to secure. Of course, if one has a good helper he can more than double the output of one man. If the hives are quite a distance apart, frames stuck together with brace-combs, and badly glued to the hive in addition, the progress of the work will be much slower. If, on the other hand, the frames are modern, spaced 1% from center to center, without brace-combs, hives close together, and near the extracting-house, one can, of course, take more honey in a given time. If he follows the practice of some, and extracts before the combs are entirely capped, or if he goes still further and extracts before they are capped at all, he can take, of course, more gallons of honey; but it may, and probably will, be honey of a very poor quality.—Ed.]

Introducing; a Modification of the Caging Plan

I catch the undesirable queen, mash her head (don't quite kill her), run in the queen that is to take her place with her at once, with no workers. I push enough queen candy in the hole to last about six or eight hours; place the cage right in over the frames, and the job is done. I had not a bit of trouble with this method when robbing was rampant. Let us compare the old with this new plan a little. By the old plan of having the bees without a queen for a day or two, queen-cells are invariably started; and when the queen is liberated from the cage she is likely to be balled and sometimes killed in favor of the cells; and about the only way to ward off this trouble is to cut out the queen-cells, which is almost impracticable. By this new plan we have conditions about as close to nature as we can get them. First, we have the odor of the undesirable queen to start with, and the bees don't seem to realize that any but their queen is in the cage, and therefore they rarely if ever ball the cage; second, when the queen is liberated she must have acquired the odor of the dead queen. By this method the bees are without a queen only about half a day, which is a big thing in the way of eggs and population.

Swainsboro, Ga.

S. CHEATHAM.

Does a Queen Lay in a Queen-cell?

The question was up in last GLEANINGS about a queen laying in a queen-cell. I have sometimes heard it questioned whether she actually lays in queen-cells or the workers place the eggs there. This recalls an experience I had last summer. In looking through brood-chambers I found a queen caught head first in a queen-cell, or, rather, a queen-cell cup. The evidence was strong to me that she had just stuck her head in there to see if every thing was all right before depositing the egg, and by some means had got caught. When I liberated her she was uninjured, and went on about her work.

Guelph, Can., Feb. 25.

MORLEY PETTIT.

The Use and Abuse of a Smoker

Kindly advise me how I must smoke the bees. Must I give one, two, three, or a dozen puffs into the hive? Must I blow the smoke into the entrance before I open the cover, blowing the smoke up into the frames, or must I remove the cover and blow the smoke down? (This latter way seems useless to me, because smoke won't go down.) Then after I smoke them, how long should I wait before taking off the cover? Should I handle them at morning, noon, or night, I mean, to find the queen? Then how shall I know if she is young and fertile or old and sterile?

G. D. CAMPBELL.

Weymouth, Nova Scotia, Can., Sept. 3.

[It is hard to give any general rule applying to the use of a smoker, for most beekeepers have their own particular ideas on the subject. In general we

may say that, in our opinion, most beekeepers use too much smoke. The point is, to use smoke to prevent the bees from "boiling up" or making an attack. An experienced beekeeper knows just when to use a little smoke to avoid a general uprising. It is far better to prevent than to try to stop a vicious onslaught by the use of large volumes of smoke afterward.

It depends somewhat upon the bees in question: but when you go to a hive to open it, it is safe, as a rule, to blow a very little smoke in at the entrance, just enough to overcome the tendency on the part of the guard bees to rush out. Then, being as careful as possible, pry up the cover just a crack, or pull the quilt away slightly from one corner, as the case may be, blowing in a little smoke at the same time. Theoretically, smoke will not go down; but in actual practice it can be blown down between the combs. However, a great amount of smoking should be avoided, as it is usually not necessary. As soon as the bees have gone down somewhat from the top-bars, you can proceed to loosen the frames and take them out. Be sure to have the smoker handy, where it can be used at an instant's notice, at the first indication that the bees are resenting the intrusion.

The best time to hunt for queens is during mid-day, say from ten o'clock until two, or on warm days from nine until three. Many of the bees will be out of the hives then if a honey-flow is on, and it is not so difficult to find the queen. Avoid opening hives early in the morning or late in the evening, as the bees are much more likely to be cross.

It takes an experienced beekeeper usually to judge a queen by appearance. You can tell a good deal by the color and size, but the best way for you to judge would be to observe the work of the queen. See whether the eggs are in regular order, whether the brood is largely worker brood, etc. A very old queen may lay too large a proportion of drone eggs, or an inferior queen will lay irregularly.—ED.]

Why no Egg-laying in the Fall?

The bees that I got during early fall were all right. The queen did her duty by laying eggs enough to satisfy me, but for two or three weeks there has been no brood. Should I expect any at this time of the year?

MRS. SUSAN E. ALLEN.

Wheelerville, Pa., Oct. 10.

[Under normal conditions the average queen in the North three months or more old will stop laying in the fall. Only young queens, thirty days or younger, will lay during the months of September and October in northern States. The condition you find is about normal with your bees. During cool weather it is best for the queen not to lay, as the bees, in their effort to take care of the brood, spread the cluster too much, and this kills some bees, and at the same time allows the brood to die.—ED.]

The Colony-odor Theory Doubted

I have not been able to accept fully the colony-odor theory that one reads of so much in bee literature. June 15, p. 419, Mr. Cargo says, "In one case, bees in an upper brood-chamber left their hive while it was set aside a few moments, and attempted to return to their regular entrance below, and were killed." I understand that these bees from the upper story, finding themselves separated from the rest of the colony, took wing and returned to the entrance of their own lower story, and there were received as foes. Why did not their colony odor protect them?

Two days ago I shook the bees of a hive which I had "Alexandered," as they had destroyed the cell I gave them, in front of the hive of their own mother, hoping to have them help her colony store some basswood honey. I had to leave them immediately after shaking; but on visiting the hive the next day I found the piece of burlap on which they were

shaken covered with dead bees. Colony odor didn't seem to cut any figure there.

At other times I have shaken strange bees in front of weak colonies; or colonies I wanted to strengthen, and they were received kindly, despite their strange odor(?).

J. F. W. ULRICH.

Hasbrouck Heights, N. J., June 23.

Learning Bee Culture, Etc.

I am a boy of 21 years, and have been raised on a farm, and worked for my parents all my life. I have been reading GLEANINGS for over a year. Though I have never met you I feel as though you are one of my friends. I have been interested in bees for a long time; but the bee fever has got worse since I have been reading GLEANINGS. I got my first bees a year ago last August, and now have four colonies, and like to work with them better than any thing else. But I feel there is so much to learn about them before going in on a large scale that I am bothered whether to keep on at home with the bees or try to get a place to work in a large apiary under an experienced beekeeper. The bees have been storing very heavily this fall, and it has been so warm that some of the honey has been breaking down.

Metropolis, Ill., Oct. 13. HARRY RODENBERG.

[My good friend, as you state it I advise you to stay at home, study your A B C book and the journals, and from the yield of honey right here in the middle of October you certainly must have a splendid place for keeping bees. I know a good many would say, "Go and work in some big apiary;" and that might be a very good thing; but it would be a considerable expense, and, as you state it, I am inclined to think you would get along faster right where you are, providing your enthusiasm keeps up.

With the start you already have, I feel sure you can build up an apiary as fast as you have skill to manage it. Quite a few who have purchased a fair-sized apiary to start with, unless they have had much experience, have made a failure. If you could visit some beekeeper near you it would doubtless be of great benefit; but I think that in the end you will gain by working for yourself in place of somebody else. It is expensive to go away from home—that is, to stay any length of time; and your bees and other work would be likely to suffer also from your absence.—A. I. R.]

Reversing the Entire Body in Order to Get Combs Built Clear to the Bottom-board

I notice that you seem to have spaces at the bottom of the combs in your deep Hoffman frames; and as this causes some bother in finding queens, and takes up valuable space I should like to ask whether you have tried this remedy:

Take one of your bee-escape boards and cut an eight-inch round hole in the middle of it. Go to any fairly strong hive during a good honey-flow. Remove the supers and separator board; place your prepared board on top of the brood-nest; nail down, making sure to wedge the frames so that they can not move. Now turn the entire body upside down on the bottom-board and you will have all your frames filled out full in a few days. Try this once, and I am sure you will like the plan.

Shellman, Ga., Aug. 22.

D. W. HOWELL.

[The plan here spoken of has been used to quite an extent. Along in the early 80's reversing was thought to be the panacea for all the ills that confronted the beekeeper. It was claimed that it could be used to destroy queen-cells, which it did not; that it would check swarming, which it also failed to do; that it would force the honey from the brood-nest into the supers. This it did accomplish to a considerable extent. There is certainly one thing it did do, and that was to get the combs built clear down

to the bottom-bar. The Danzenbaker hive accomplishes this last feature very nicely, because the frames are reversible. But in later years very little importance, comparatively, has been attached to the matter of reversing. However, one can get the combs of the Hoffman-Langstroth frame built clear out to the bottom-bar as here explained.—ED.]

A Statement

On page 567, August 15, Doolittle is asked the question: "Did you read on p. 503, GLEANINGS for July 15, that the 'first queen-cell is likely to hatch on the ninth day from the time the prime swarm issues'?" The above quotation is what was added to the title of my article on that page. The title of my article was: "The Control of After-swarms." The other part of the title as it stands on that page was added by some one else. In my article I did say in one place "due to hatch," when I should have said, "due to be hatched." But then I immediately qualified it by saying, "That is, the forenoon of the ninth day after the first swarm in an apiary issues, a young queen is quite likely to be hatched." It was not the time of the queen's hatching that I was concerned about, but the time to look after the colony to prevent after-swarming. There is no discord when understood.

Huntington, Ind.

J. W. SOUTHWOOD.

Scarcity of Drones Retarding the Swarming Fever

Does it not seem reasonable that a hive running over with big clumsy noisy drones suggests that the home is a bit crowded?

Douglas, Ariz., May 21.

M. CLYMER.

[A superabundance of drones might suggest a crowded hive, but not necessarily so. In many cases, at least, their presence is due to a failing queen whose eggs are producing a large percentage of drones rather than workers. They may also be due to a large amount of drone comb in the center of the brood-nest during a honey-flow. At such times a normal queen, especially if she is a year or more old, will lay in drone combs almost as readily as in worker combs, and especially so if swarming is in prospect. In modern management there is no excuse for an excess of drone comb in the hive. It is a big waste of bee energy that might be better utilized in the production of worker brood.—ED.]

Painting Hives while the Bees are in Them

Would it harm the bees or brood to paint the hives with pure white lead and linseed oil while the bees are in the hives? or is it best to move the bees into a new hive while painting the old hive?

Do gentle bees gather as much honey as ugly ones under the same conditions?

Will blooded Italian bees winter as well as hybrid or native black bees under bad conditions?

Which is the larger bee—an Italian or a hybrid? Marshfield, Wis., Feb. 14. JAMES MAXWELL.

[You can paint the hives almost any time, whether the bees are in them or not; but if the painting is done while the bees are flying we recommend leaving the alighting-boards until after they are all in the hives at night. In the morning the paint should be dry enough to make no trouble. Always remember to apply very thin coats of paint well rubbed in.

Gentle bees may gather just as much honey as irritable ones, although it is true there is a danger in breeding for gentleness alone to secure bees that are not worth as much, so far as being able to gather honey is concerned, as other bees that are better hustlers. There is no reason, however, why the best workers in the apiary may not also be gentle.

Pure leather-colored Italians are just as hardy as hybrids, for they came originally from northern Italy,

where the winters are severe. Our experience has been that the extra-yellow Italians are not quite as hardy on the average.

The size of the bee does not depend so much upon the race as upon the strain. If the stock is allowed to degenerate, the bees may be somewhat undersized. It has been claimed that bees reared in combs thirty or forty years old are also undersized; but we ourselves have not been convinced of this.—ED.]

Five Years Record in Idaho; New Idea for a Feeder

We have had unfavorable weather for bees—some windy days, and too much rain. The first year I kept bees in Idaho I secured 31,000 lbs. of honey from 190 colonies; the second year, 62,000 from 400; the third year, 47,000 from 425; the fourth year, 65,000 from 500. Now in this, the fifth year, I shall do well to get 30,000 pounds from 500 colonies. I have increased to 750. That is some gain. We have worlds of feed. Still, I am not discouraged with the business. If I am once able to keep a stock of supplies on hand I can make a living from just such a year as we are going through.

I wish to give a suggestion for making a feeder. I use the wide entrances. It could be made of tin, and could be half an inch deep and about 10 inches wide by 15 long, so that it could be used in an eight-frame as well as a ten-frame hive. This feeder could be made corrugated, something like an old-fashioned washboard, only deeper. This would prevent spilling as each one of the little troughs would be separate. I think such a feeder could be made to hold from 1½ pints to a quart, and could be shoved right under the brood-nest. If the hive were level it would do no harm if it slanted forward. What do you think of it?

Rigby, Ida., Aug. 9.

L. A. COBLENTZ.

[Feeders of this type have been used, and there is no particular objection except that the syrup so nearly exposed is rather inviting to robbers.—ED.]

Reply to C. W. Arnett; Sulphur and Salt Treatment for Diseased Bees

In reply to C. W. Arnett's query. Aug. 1, p. 548, I will say that I had one colony that acted the same way. I was at a loss as to the cause and cure. No Himalaya blackberries are there to my knowledge. In July I had a swarm develop paralysis. Hundreds were dead in front of the hive. I began by searching back in numbers of GLEANINGS for a remedy. I found where one apiarist sprinkled salt on the alighting-board. It helped somewhat.

I found, too, that an experienced beekeeper who transferred bees to another hive always effected a cure when sprinkling the entrance with sulphur, and salt did no good. I had to walk to town 2½ miles to get the sulphur. I mixed equal parts of salt and sulphur, and sprinkled the entrance four or five times that day. That ended the trouble.

I then thought I would try the same treatment in case of a colony that was acting similar to C. W. Arnett's bees. It cured that colony, and the bees stored honey as fast again after the treatment.

Colo, Iowa.

MRS. OSCAR TRIPP.

An Average Crop in Dixie

As our season is drawing to a close I want to send in a report on our honey crop from this part of beedom.

With a very few exceptions there has been about an average crop of honey made in every section throughout Dixie.

Cordele, Ga., Sept. 5.

J. J. WILDER.

Our Homes

A. I. Root

Be still, and know that I am God.—PSALM 46: 10.

What is man that thou art mindful of him? and the son of man that thou visitest him?—PSALM 8:4.

But I say unto you, that ye resist not evil.—MATT. 5:39.

In our issue for Feb. 15 I gave you a sketch of my childhood days; and I mentioned one of my boyhood playmates who was greatly interested in electricity and chemistry as well as myself. In later years our ways were far apart, or since we were about twelve years old. But recently we have hunted each other up, and renewed the acquaintance of childhood. Below is a letter from my old friend "Corwin":

Dear old friend Amos:—I wish to thank you for GLEANINGS that still reaches me regularly. I read your talks with interest, though, as I have told you before, I can not think that God, who has 8,325,000 suns with accompanying worlds to look after, according to recent estimates by our astronomers, is taking so much interest in you and a lot of young "toughs" who try to annoy you for riding in an old runabout auto. If you would get a six-cylinder, goggles, gauntlets, and a big cigar, and put on some "style" (even if it took a mortgage on the plant), you would not be troubled, and would only have to stop and pick the arms and legs out the wheels now and then. Yes, Amos, I was annoyed in the same way when I was driving my old pet horse years ago. It is all a question of style with the young Arabs.

It seems more reasonable and tangible to think that, when your prayers are answered, it is by some friend who is interested in you on the other side of life. The Rev. Lyman Abbott has said recently that influences come to us from the unseen. There is little that is tangible in your belief, and that is what is the matter with your churches. The little girl's definition in the enclosed clipping is too true.

Discussing the lamentable fact that, according to the last census, half the American people never go to church, Canon Hughes Scott recently said:

"The trouble is, perhaps, that Americans have a wrong idea about the church. They think the church wants them to believe a lot of outworn dogma. That is not true.

"Yes, the trouble is that the people define faith as the little girl defined it in school.

"Faith," the little girl said, 'is believing what you know isn't true.'"—Washington Star.

I am enjoying the best of health. No "meats" in mine. T. C. P.

My good friend, don't you suppose you could knock off a couple of millions from the figures you give? And who is it among the scientists and astronomers of the whole human family that have been able to figure out just 8,325,000? Why not say five millions or ten millions? Are we not all getting into pretty "deep water" when we attempt to let our imagination go out into space? Suppose the astronomer is correct, and that there are all of those millions of suns with their accompanying worlds. After having so many, what is there outside? In other words, how far does space extend beyond the heavenly bodies? This is an old,

old question. It has baffled the human mind ever since the world was created; and in contemplating this vast universe, no wonder the Psalmist broke forth in the language of our text—"What is man that thou art mindful of him? and the son of man that thou visitest him?"

It is a stretch of faith, I admit, dear old friend, to believe that God has in mind each and every one of us. We might, for instance, suppose that all of these planets, with their millions of suns about which they revolve, are inhabited like this world of ours, and we might go on and question whether one God could oversee and keep track of it all. With our feeble and childish intellect we might suggest that there are many gods as do the heathen. But would that help the matter any?

There is another text in Isaiah which says, "For my ways are not your ways, neither are my thoughts your thoughts." And in all this groping with the imagination, shall we not recognize or keep in mind that the only one true God is incomparably beyond humanity, even our best specimens, and beyond human comprehension? If we fail to comprehend space, is it not likely we shall in like manner fail to comprehend God? Our days are but few—that is, here on earth, and his are for ever and ever. If all the books on astronomy and theology were collected together they would give us no information that touches or comes anywhere near the Bible, God's holy word. Whatever we may say about the Bible, or think of it, we must recognize that it is unlike any thing else; and it is not only unlike any thing else, but it holds up a higher standard of morals than do all the books together in this world of ours. Whenever the Bible goes, civilization goes with it, and progress also, such as our own nation is making just now.

There are many bad things and bad people in this world of ours; but notwithstanding all this, is it not generally true, as we have it in that brief legend on our coins, "In God we trust," that this great and adorable being has sent just one messenger here to earth—his only Son? and the message brought is not only unlike every thing else, but it is above and beyond every thing else.

We started off to consider prayer. Jesus' little flock of followers were once worried about this very matter of prayer. They came to him and said, "Lord, teach us to pray." While we have all of us repeated

this old prayer so many times that it falls on our ears, I fear, without meaning, it is a wonderful prayer after all. I wonder if the Holy Spirit will give me grace and wisdom to present it to your view from a little different angle or view-point. I have often wondered if the dear Savior considered or waited a while before he gave us that brief petition for a copy. I am inclined to think he gave it offhand. First, he says, "Our Father who art in heaven." What does that mean? First, we are told that God has a dwelling-place, and that his dwelling-place is heaven. There has been a good deal of talk about heaven here on earth; and I am quite in agreement with the statement that we can have both heaven and hell here in this world, and it is largely a matter of our own choosing. Well, Jesus told us that all prayer should be addressed to our Father in heaven. What next? "Thy kingdom come, thy will be done on earth as it is done in heaven." Heaven is not only God's dwelling-place but his kingdom, and God has subjects there. They are loyal, faithful subjects, trusting in him—a place where his will is the constant effort of every one of his subjects.

We might speculate as to what sort of place God's kingdom is. Now, I need not try to explain it, for the dear Savior spent a lot of time in trying to explain to his faithful followers what God's kingdom is like, as we see in the 13th chapter of Matthew. Get the good book and go over it yourself. Now, Corwin, you and I speculated sixty years ago as to what the future would be here in this world, or after we had left the world. I suppose that, during all of our separate lives, we have wondered and conjectured as to what we are here for. What is to be the outcome? What does God expect of us? What did he expect when he created us and gave us our physical bodies and our mental and spiritual intellects also? Is it at all reasonable to suppose that he would lose interest in man, the crowning work of his creation? You and I have witnessed the wonderful developments in electricity, X-rays, radium, etc. Are we to drop it when old age comes on and we pass away? God forbid.

I forgot to mention, when I quoted the first word of that prayer, we are told God is our Father. A father never loses interest in his children. His whole life, as a rule, is spent in making the best provision for them he knows how. God is our Father. Are these busy lives of ours to be all there is of it? Shall we never get a better glimpse of astronomy than we have here from our comparatively small and narrow standpoint in the universe? God forbid. I fully ex-

pect to get a glimpse of these "eight million suns" you have talked about, far, far beyond and above what any telescope can reveal in this world of ours.

Did you ever stop to consider how many times Jesus promised over and over "everlasting life," or eternal life—a life beyond the lives we live here? He kept saying it over and over, in substance, "Whoso liveth, and believeth in me, *shall never die.*"

Now to get back to where we started. Is it possible that God can recognize and listen to us individually with all the responsibilities he has on his hands?

Last night in closing down our wood-working factory some of the machinery gave out. In fact, we are just now at work putting in different boilers and a new engine. I was away when the mishap occurred. When I arrived home I questioned as to whether the hands had been notified that we could not start up our wood-working machinery in the morning, and I fear our people did not consider it as a very serious matter for a lot of good faithful hands to come here with their dinner-pails without expecting they would have to be sent back home. The matter worried me so much that I awoke several times in the night. Twenty minutes before the whistle blew I stationed myself near the entrance at the time desk, and explained to each man and boy the condition of affairs; and with the help of other members of the firm we studied up work that needed to be done about the premises until they all had a job; and I did not breathe easy nor feel happy until each one who wanted work was started. There was seasoned basswood to be taken down from the hill; and in order to have the teams and wagons in readiness I was up before five; but it was quite a responsibility on my old shoulders to plan some useful work for toward a hundred people until the "wheels could go around" once more. Some of you may laugh at the idea of being responsible for only a hundred or less workmen. Down at the Panama Canal, now nearing completion, Goethals had charge of something like ten thousand men. We had to ransack the world, however, to find a man who was great enough and big enough to undertake the task. He is now finishing it, and it promises to be one of the greatest triumphs of the world and of the age. Our country is producing such men; but I confess there are only a few of them.

Now, dear old friend, we might try (but that is about all we could do) to comprehend a being who can lay plans and keep in mind the best good and the well-being of all the people in this great world, or some-

thing like 1400 million. Of this great mass of humanity about 450 millions are Chinese; and my impression is they need quite a little "looking after," with their idolatry and superstition. If I am right, God created them also, and planned a glorious outcome for that heathen nation; and, thank the Lord, that glorious outcome is already in sight. Now, can we not step still a little higher up, and have faith to believe that he who has created the universe will finish the task he has undertaken? * Washington, Lincoln, and other great men of our nation, have been, and our present incumbent is, a believer in God and in prayer to him; and I believe the intelligence of the people of the United States regards prayer as a mighty force in the affairs of the world. Every little while somebody comes to me or writes me something like this: "Mr. Root, your little prayer, 'Lord, help,' has cheered my life and helped me to surmount a lot of trouble." Jesus urged at times almost vehemently that his followers should watch and pray. He says, "Ask, and ye shall receive;" and he tells us also that "the Lord pitieth them that fear him."

Now a word in regard to the "street Arabs," as you are pleased to call them. I want to say to our readers that I can imagine a twinkle in the eye of my old schoolmate when he speaks about picking

* Now, while we are contemplating the great Ruler of the universe let us try to comprehend that this Creator is also *Father*; and while doing so let us listen to the words of the dear Savior when he says (Matt. 10:29, 30, 31), "Are not two sparrows sold for a farthing? and one of them shall not fall to the ground without your Father. But the very hairs of your head are all numbered. Fear ye not, therefore; ye are of more value than many sparrows." With all God's care of this vast universe, is it not comforting that we are in his sight of more value than many sparrows? If we reject those beautiful words of the Master as too wonderful and too impossible (if you will excuse the expression) what shall we do? Do you remember what Peter said when the Lord asked them if they too were going to turn away? "Lord, to whom shall we go? Thou hast the words of *eternal life*."

Our older readers will recall that I have often mentioned a small particle of radium that I have had in my possession for several years. Suppose you take a cambric needle and touch the point to a drop of white paint. With a magnifying-glass you could just see a speck of paint on the needle-point. Well, my particle of radium is about the size of that speck of paint. It can be seen only with a magnifying-glass. But, small as it is, it has been day and night, winter and summer, year after year, throwing out showers of shooting stars. They continue to pour forth in every direction like a water-spout, and yet the radium is not exhausted. The "bombardment of meteors," as it has been called, is in no way diminished. I put it in a dark room three or four days ago, and got up in the middle of the night, and there it was blazing forth in undiminished splendor. So far as I know it will go on in this way for ever and ever. Scientists are nonplused and appalled. It upsets and overturns old theories. Now, is it too great a stretch of the imagination (backed by the words of the dear Savior) to believe that God's love for the creatures of his handiwork—for mankind, his greatest and final creation—is it too great stretch of our faith to believe that God's love and care can go out unceasingly in the same way toward his children?

the "arms and legs" out of the wheels, etc. I admit these small boys are often provoking. Now, we who are older should keep constantly in mind that boys can be taught like ducks and chickens. A little teaching prompted by the Devil would induce them to puncture your automobile tires and do other mischief to the machine. Another kind of teaching will make those boys your friends instead of enemies.

I once became discouraged about a boy whom I had labored with repeatedly, apparently without success. A Christian lady said to me something like this: "Mr. Root, Jesus died for him." It set me to thinking. When we feel vexed and provoked at these boys' antics, let us stop and consider that Jesus died for them. He died that they might be made better.

I am soon to go back to my Florida home, and I suspect I shall have more trials along this same line. Satan has found out that he can trip me up, for he has tripped me up in times past. Dear friends, you who believe in prayer, and have had your prayers answered, will you not pray for me and for those boys, all of them?

Now just a word in conclusion about unpromising boys. In looking back through sixty years I remember quite a few that I pronounced at the time "no good." But years after, when I heard from one and another that they had climbed to positions of excellence, it was one of my "happy surprises." One especially I have in mind that vexed me repeatedly because of his awful indifference and heedlessness. I have just been told that he has made some valuable invention worth thousands of dollars to manufacturers of automobiles. I said when I first heard of it, "Why, no; it can not be that that boy has become a great inventor?" Perhaps I did pray for him in his youth, but if so I am seriously afraid I have forgotten about it.

Shall we not wind up, dear friends, with that beautiful injunction from the dear Master, so wonderfully hard for poor humanity like you and me to carry out? "Love ye your enemies. Do good to them that hate you. Bless them that curse you, and pray for them that despitefully use you."

Blind unbelief is sure to err,
And scan his works in vain;
God is his own interpreter,
And he will make it plain.

Later.—Just after the above was dictated, this letter was placed in my hands, and from it I make extracts of three paragraphs:

Dear Sir and Friend:—Yesterday's mail brought me from some source a marked copy of *The Flaming Sword*, covering a four-and-a-half column of super

ficial absurdity in an attempt to ridicule your belief and that of the Christian world in the power of prayer.

The mother or father can think and speak from a living soul-inspired experience on the intensity of parental love. To all others, the measure is one of imagination and speculation. So with the Christian soul in the realization of the Father's presence as the guiding influence of his life. He has an inward knowledge of the power of prayer and the assurance of an answer that mystifies the groping speculator and puts the cynic to confusion. [Amen to the above.]

Just one more question: How long would it take

for *The Flaming Sword* species of reasoning to abolish slavery, wipe out the white-slave traffic, or accomplish any other moral reform?

LEWIS P. TANTON.

Charlottetown, P. E. I., Can., Nov. 23, '12.

Perhaps I ought to feel complimented to think that any periodical should devote four columns to try to set me right. But I think it would take a great deal more space than that to persuade devoted Christians that God does not answer prayer.

High-pressure Gardening

"HIGH-PRESSURE" GARDENING IN OCTOBER.

Let us not be weary in well doing; for in due time we shall reap if we faint not.—GAL. 6:9.

There are a good many disappointments—yes, grievous disappointments—in gardening. We might expect, however, that in high-pressure gardening we get rid of the disappointments. And it *does* get rid of a large part of them, but not all. In our locality here in Medina, along the last of September and during October, much trouble comes from frost. I was particularly anxious this year that the frost should hold off because of the dasheens! have told you about; so I was watching the thermometer and barometer with great anxiety whenever there came a cool night. Do you want to know what the barometer has to do with frost? Well, it is this: Along in the fall of the year especially, the barometer usually drops for a warm spell, and rises for a cool spell. When it runs away up, oftentimes a day or two before, it indicates a probable frost. On the 22d of September there was a little frost on the boards and other exposed places. Next morning I told the children that I could tell before noon pretty surely whether we would have a frost. The barometer was rushing away up, indicating a clear sky. The wind was in the northwest, and by 3 o'clock the temperature was down to 50.

One of our rules in the care of tender stuff is that, when the mercury stands at 50 or below at sundown, there is danger of a frost. This is not always true, but it comes so near it that it is pretty safe to rely on. Well, after three o'clock I told them all to hunt up their empty jute grain-sacks and cover up the stuff. The dasheens were my principal anxiety. I found two large sheets which we use to cover stacks of grain, etc., which I spread over the dasheens as well as I could. But they were so tall that the sheets were not large enough to tuck down around the edges. The consequence was, the dasheens were nipped almost as badly

under the sheet as elsewhere. After the frost was over, however, and the sun was up so I could see how much they were damaged, I went round with a sharp sickle and cut off the injured leaves. I think this was a profitable thing; for where I missed a leaf or portion of the stalk that had been frosted, it rotted down quite a piece beyond it. Where I clipped off the injured part, the stalk as well as the leaf, the effect was nothing more than a severe pruning; and when a longed-for shower, right after we had been having a severe drouth, came on the 28th, and lasted two or three days, the dasheens picked up amazingly; and to-day, Oct. 11, most of them have put out new leaves, and seem to be growing almost as well as before the frost, for we have had almost two weeks of real summer weather since the big rain of September 30.

Now, just below the dasheens were the six tomato-plants that I have mentioned—Green's hybrid. These plants were loaded with green fruit when the frost came, or, rather, they were sprawling all over the ground, full of fruit almost ripe.

Now, here is a matter that comes in, in regard to training tomatoes on a trellis. When I saw the enormous amount of tomatoes they were going to give us, I felt sorry to think that these were not trained on a trellis; but when the frost came, I saw at once my clean hard clay ground was the thing after all. All I had to do was to get a lot of empty burlap grain-sacks and blanket the plants. Although the surface of the sacks was white with frost, the tomatoes were not hurt a particle. You see, the warm ground was a protection from below, and we have been having basketful after basketful of the finest tomatoes of the season, notwithstanding the big frost. The warm sunny days, with a temperature a few times up to 85, just suited the tomatoes. Below the tomatoes were the cantaloup melons I have spoken of. I did not have grain-sacks enough to cover these; but, al-

though the frost killed the green foliage, the warm ground kept vitality enough in the vines to ripen up the cantaloups finely; and I have been having a nice cantaloup with my apples for my five-o'clock supper all through September and the first week in October, and all that from a five-cent package of seeds and some of that rich old rotted stable manure I told you about. The same is true with the Hubbard squashes. There are twenty-six, most of them great beauties, from a five-cent package of seed.

Lying close to the dasheens were our Early Ohio potatoes. When I soaked up the ground between the rows of dasheens with this heavy mulch of old manure the water flowed on to the rows of potatoes, and we had a big yield; but, sad to relate, the heavy application of stable manure made them so scabby, crooked, and ungainly, that many are almost unfit for use. Both the Early Ohio and Early Rose potatoes are bad on our ground in respect to scab; and although I am a potato crank, or used to be, I have not dared to show to visitors nor to anybody else my crop of potatoes. But, just wait a little. I have something else to tell you about potatoes. Before new potatoes were fit to dig we purchased some fine handsome Carman No. 3. They may have been only the Rural, of which the Carman is a seedling, but a much handsomer potato. After we began digging our new potatoes there were a few of the Carmans left in the cellar; and although it was the middle of July I decided to plant them. I had one row up near some tall evergreens. When I planted them I had a kind of feeling that I was wasting my time, because I thought the evergreens would rob them of moisture and fertility. Well, when the frost came they were growing very luxuriantly; but although the branches of the evergreens did not reach very near the potatoes, in some way the big trees kept off the frost, and the potatoes grew right along until this morning. As the vines were dead, I dug the potatoes, and it was one of my "happy surprises" to find great beauties, almost as smooth and handsome as new-laid eggs, and not a trace of scab anywhere. Just a few days before, Mrs. Root urged me to grow potatoes on some other ground, because our garden had grown potatoes ever so many years, and the ground must be badly infested with scab. Now, can anybody tell me why these Carmans escaped scab entirely? Was it because they were planted so late, or had the branches of the evergreens something to do with it? Was it because the potatoes were of a different variety? I should be glad to know.

Just below the cantaloup melons there

were six egg-plants, and to them too was given some of that old manure; and I think some of the water from my irrigation got down there. We had a dozen of the largest and finest egg-plant eggs I ever saw. One was so large that we divided it up and sent parts to our neighbors. These too were made to give a big yield of fine eggs, in spite of the severe drouth, by digging the dirt away from each plant clear down to the fine white hairy roots. Then the manure was sifted down all through these roots, and the whole well soaked up with a watering-can, and soft dry dirt was hoed up after the watering.

The success I met with almost all of my crop has required some hard and faithful work; but the hard work, taken a little at a time, was just what was needed to give me inspiration to make these pages you are looking at helpful. Is there not a wonderful truth in the latter part of my text—"In due time we shall reap if we faint not"?

"HIGH-PRESSURE" CORN CULTURE.

Some years ago, on a visit to our Ohio Experiment Station, I was shown a long field of corn. The field was long enough so that each row was planted entirely with a single ear of corn. The professor who was with us called our attention to one row that stood almost entire the full length of the field, with scarcely a broken stalk; but owing to a hailstorm a few days before, the rest of the corn was broken more or less. Some rows were almost or quite all snapped off by the wind. Now, by selecting seed from this row that stood the blast we could readily get a field of corn that could not be easily blown down. But in getting such heavy stalks to stand the blast, we might cut down the number of bushels. They were then experimenting on this very thing, and the matter was dropped to look at something else. Well, the periodical called *Corn* (Waterloo, Iowa) has a wonderful picture in its October number. A like number of kernels were taken from two ears of seed corn. The corn from one ear gave a bushel box full heaped up—stacked away above the top. The corn from the other ear, side by side, and exactly the same treatment, gave only a peck of inferior corn. What do you think of that? When a farmer goes to his cornerib and selects his seed corn, there is no way in the world for him to tell by the looks what ear will give a peck and which will give five pecks. The farmer who takes time by the forelock, and plants some whole ears a year or two years before, and saves seed from the ear that gives the biggest yield of nice corn, will,

by keeping this up, soon have a "pedigree" strain of corn that might not only give him double the crop, but four or five times as many bushels as if he stupidly followed luck and chance. Dr. Miller, in one of his *Stray Straws* for Oct. 15, calls attention to this same thing; and it is going on, not only with field crops, but in our egg contests that are now being exploited, and reported all over the world.

From every State comes the complaint that, while experiment stations are making such wonderful discoveries, and taking such pains to send out bulletins to the farmers, a great lot of these same farmers never visit their State testing farm at all. Over and over again I say to my farming friends, "Surely you have been down to the big farm at Wooster?" Almost invariably the answer is that they have talked about it but have not had the time. Sometimes this is the case when they could get there in two or three hours. The Department of Agriculture, recognizing this, is now, at least in some States, sending competent men around among the farmers to teach them high-pressure farming. You need not come back to me and say the farmers sometimes know more about farming in their own locality than the government experts. Look at that picture I have referred to in *Corn*, and then own up that you have been stupidly farming with your eyes shut—yes, with your eyes really shut to what is going on in developing new and better strains of seed corn.

THE LOGAN BERRY, OR BLACKBERRY RASPBERRY.

Some years ago I was greatly pleased with the Logan berries of California. In fact, they were so plentiful (and I presume they are yet) that they were on all the fruit-stands in the streets of Los Angeles. They tasted much like a great big luscious raspberry more than any thing else I can think of, and very much resembled the Northey blackberry that I made such a fuss about down in Florida. By the way, it is no more than fair that I should tell the readers of *GLEANINGS* that there has not been a good yield of this wonderful berry since I gave it such a write-up. Anthracnose, or something similar, attacked it on my ground, and on the grounds of my neighbor. Neighbor Raub, who, however, had two or three small clumps of berries in his garden to which he gave extra care, fertilizers, and watering, got some beautiful nice berries. Spraying might remedy the trouble; but I have not been able to learn whether anybody has tried it. Well, now, let us go back to the Logan berry of Cali-

fornia. Several have been inquiring of late in regard to it. Green's *Fruit Grower* says it has not been a success in the East, nor in cold climates, so far as they can discover. But there is no reason in the world why it should not be a success in Florida, unless, indeed, this same anthracnose should attack it. I am going to submit the matter to friend Reasoner, of the Tropical Nursery. By the way, the berries are so plentiful that Sears, Roebuck & Co. catalog the canned berries. A good-sized can is only 20 cts., and they are certainly a most delicious fruit, larger, if any thing, than average blackberries.

DASHEENS; THE FINEST IN FLORIDA EXCEPT THOSE AT THE BROOKSVILLE GOVERNMENT STATION.

Mr. Root:—I send you a picture of my dasheen, taken Sept. 13. The plants average between six and seven feet high, and cover the ground completely. The tops have not grown perceptibly for several weeks past; but the tubers are forming rapidly, and promise a heavy yield.

The soil on which they grow is a well-fertilized humus-filled sand. I ridged the soil with furrows about six feet apart, planting two rows of dasheen to each ridge. The soil is so moist that there has been more or less water in the bottom of the furrows all summer.



Neighbor Ault's dasheen, with a glimpse of friend Ault and the banana-plants in the background, just above his head.

As to the quality of the dasheen as a food, we have boiled and roasted them; and while they are fine grained, and of fair quality, we prefer a good Irish potato. No doubt they will be more palatable when fully matured.

Bradentown, Fla., Sept. 30.

Later.—A man by the name of Young, representing the State Agricultural College at Brooksville, called to-day and took some pictures of my dasheen. Mr. Young noted the size of the plants and the method of cultivation, soil, etc., and he said that he regarded my patch of dasheen as the best in the State, with the exception of some at the college farm at Brooksville.

When I asked Mr. Young his opinion in regard to the food value of the dasheen he said he thought it was going to be of great value, especially to Florida. He said the dasheen is at its best when fully matured, and when dug they should be aired and dried for a few days.

We have had no rain, until now, for several days, and the air to-day was delightfully cool and pleasant. Bradentown, Fla., Oct. 3. ARTHUR E. AULT.

The above corroborates what I have said about dasheens before perfect maturity. They are very fair eating, but nothing like the hard, solid, matured tubers sent me by the Department. The young shoots, however, and tender leaves, are all right, and make a very good substitute for mushrooms or oysters, with a few crackers added. The writer of the above, Mr. Ault, is a near neighbor of mine; in fact, his place is just on the other side of my fence. The dasheens he mentions grew on the same damp piece of ground where I found those wonderful Northey berries described in GLEANINGS about two years ago.

DASHEEN SEED—WHY IS IT NOT IN OUR SEED CATALOGS?

Ever so many are asking the above question; and for the first time I find a brief mention of it in a seed or plant catalog for the spring of 1913. This catalog of plants has just this brief mention, and nothing more:

"Dasheen, similar to the caladium, 10 cents each."

As the question recently came up in GLEANINGS as to how long dasheen could be kept for seed, the following letter answers the question:

Mr. A. I. Root:—Here is a dasheen of last year's growing, which I am sending you to show its keeping qualities. It passed the winter in the cellar in a basket with the rest of my crop, and has been lying through the summer neglected on a shelf in the cellar. So far as I can see, it is still perfectly sound and able to grow, unless for the fact of its bud having been broken off. I broke it off to see for sure whether it was still fresh.

The root, as you see, is very small. It had to undergo a dry summer in dry ground, so that the plants attained a height of only about seven or eight inches. The roots were, therefore, all small, but were solid, kept well, and grew vigorously when planted. They are of the Japanese variety. This year I planted also some tubers of a West Indian variety, which supposedly is not so well adapted for so far north as this, yet they are making a slightly

heavier growth than the Japanese; and the Japanese, in spite of the excessive drouth, have done better this year than last.

B. C. AUTEN.

Oronogo Fruit Gardens, Carthage, Mo., Oct. 1.

The above came to hand in perfect condition apparently, and I think there is no question but that it will grow; and if so, this settles the question that, when properly cared for, the seed will keep as long as a potato, or perhaps still longer.

Please note what I told you last winter—that where the bulbs are dry and hard it ordinarily takes three or four weeks for them to shoot up through the ground.

DASHEENS GROWN IN OHIO; E. C. GREEN, OF THE HYBRID TOMATO, GIVES HIS OPINION.

Friend Root:—Thanks to your kindness, a few days ago I enjoyed a treat that I think would have pleased many of the readers of GLEANINGS—a meal of Ohio-grown dasheens. The tuber we boiled as we did potatoes, which was, perhaps, not best; and as they were not ripe yet, they did not please us as well as good potatoes. But the tops cooked as asparagus were a "happy surprise," for thy compared favorably with mushrooms. When the fall-bearing strawberries were introduced I did not get as enthusiastic about them as many, for I thought if they came in competition with peaches, pears, grapes, etc., they would have a hard time; and this has proved true, I think. So with the dasheen. The tuber which will have to compete with the common and sweet potato will have to be extra good; but if the tops compare only with mushrooms they will certainly be a fine thing, for it is always hard to get enough mushrooms.

Stephen (my son) was up from the Experiment Station when we had them cooked, and he said, "We shall certainly have to try them at the Experiment Station next year."

Medina, Ohio, Oct. 15.

E. C. GREEN.

I will explain to our readers that I gave neighbor Green a whole plant, of course not fully matured. I think it was the large central corm he boiled as stated. These we do not find very toothsome; but the side tubers cooked with or without the green stalk and stem we think splendid food, and we are having them almost every day.

THE AMADUMBE, THE DASHEEN OF SOUTH AFRICA. SEE PAGE 740, OCT. 15.

Mr. A. I. Root:—Whether these amadumbe will prove to be identical with some of the dasheens that you have I shall be interested to learn. Note every one who tastes them for the first time likes them very well; but not only natives, but children of missionaries and of settlers, who are brought up with them, are very fond of them. These are several varieties here that are eaten, and others that are so coarse and watery that they are not considered fit to eat. These are of the variety that we consider the best.

W. L. THOMPSON, M. D.

Mount Silinda, Melssetter, S. Rhodesia, S. Africa. August 30.

TOMATOES—HAVING RIPE ONES IN NOVEMBER.

My wife and I take and clean or wipe them off (the green tomatoes) before the frost gets them, and then wrap them carefully in tissue paper and lay them in small baskets only two deep, and store away in a dark cool closet, and about Thanksgiving they will ripen, or sometimes later.

Cleveland, Ohio, Oct. 13.

JOSEPH BECVAR.

CEMENT HOT-BEDS, ETC., FOR EARLY TRUCK.

On page 589, Aug. 15, I spoke of James Hilbert's cement hot-beds or cold-frames. You will gather from the clipping below, from the *Grand Rapids Press*, that he has made quite a success by starting stuff under glass and carrying it to market with a motor truck.

HE GETS \$400 AN ACRE FROM TRAVERSE FARM; JAS. HILBERT, USING MODERN METHODS, WINS BIG YIELD FROM VARIOUS PRODUCTS; HAULS WITH THE MOTOR TRUCK.

TRAVERSE CITY, Oct. 3.—That intensive farming in western Michigan pays has been conclusively proved by James Hilbert, who owns a large farm northwest of the city. Last spring he planted an acre of Osage muskmelons, the plants of which he started under glass in order to have them ripe in time for the fall market.

During the summer the plants secured a good growth, and on Sept. 1 he brought his first load to town and sold them to the merchants. Since then he has marketed a load every day; and after he had sold his load to-day his figures show, after having kept a careful record, that he has made \$300 from the crop from this acre of land, and still has several more loads to market before the total crop is harvested.

USES MOTOR-TRUCK.

Good as this record is, he has done still better with a third of an acre of mango peppers from which he has already marketed a product that has brought him \$170, and they are not all harvested yet. He is even prouder of the returns he has received from an acre of Earliana tomatoes, from which he has supplied the local trade during the season. This acre has done better than his acre of melons, for the total receipts for the season reached the \$400 mark.

Mr. Hilbert delivers his produce to the merchants daily, bringing in every morning a motor truck load of all kinds of vegetables and fruit in season, and he is looked up to by the grocers as one of the essentials of their business. His farm is also famous for the onions he raises, and which he keeps in a large frost-proof cellar and brings them to town as they are needed by the grocers. Mr. Hilbert pretends to be no more than an ordinary farmer who gets results by knowing his business and sticking strictly to it at all seasons of the year. In keeping his books he has as perfect a system of accounting as any mercantile house, and does nothing by guesswork.

GARDENING FOR "PROFIT."

After what I said about gardening for profit in our issue for Sept. 1, I came across the following in the *Rural New-Yorker*:

On many farms you may find an old man or a man in poor health, or perhaps a cripple. These men are usually unable to go into the field and do a full day's work at hard labor. Some of them, denied the power to do this, feel that life has cast them aside, and I have seen them grow unhappy and bitter at their prospect. If these men would but think so they could take a small piece of land, fit it for a garden, and do wonderful work upon it. The labor would be well within their powers, and the results far beyond any thing they ever reached at plain farming. For you see gardening is higher farming; and many of these older men would renew something of their youth and courage in the thought that they can force one acre to produce more than ten acres ever did in their old system of culture.

Not only would this garden become a wonder, but it would finally improve the entire farm. It would be an object lesson showing what can be done if the soil is only well handled. Before long the boys would see that garden, and begin to ask themselves why they should work three acres in half-way fashion when, by applying something of garden culture, one good acre would give the same crop. That is what a good garden will do; and the older man would find that this higher farming has enabled him to influence the farm as he never did before. These are only a few reasons why every farm should have a good garden. Had you been with us for dinner on the Sunday I speak of I could have piled up your plate with a dozen convincing arguments.

Do you see the point, friends? These old men, after they get through gardening for *profit*—that is, for dollars and cents—may work (as we read about in the good book) for treasures laid up in heaven; for whenever we get to a point in our lives where we are working for humanity and the coming generations is it not really for "treasures laid up in heaven where moth and rust doth not corrupt, and where thieves do not break through nor steal"?

NOT ONLY A BOYS' CORN CLUB BUT A GRAND-FATHERS' CLUB.

We clip the following from the *Monthly Bulletin* of the Ohio Department of Agriculture:

My dear Mr. Sandles:—I have just been reading your hair-raising report of the "boys' corn-growing contest," and am glad of the "boys' corn-growing." But it pains me to think and know that in Ohio there are hundreds of boys who never saw a hill of corn grow.

This year I wish the poor and honest lad could be placed on a par with the rich man's son. What do I mean? Why, I mean this: If a boy produces 60 bushels of corn at a cost of 15 cents per bushel, I claim he has achieved far greater results than the lad who produced 100 bushels at a cost of 50 cents per bushel. Let the lad who has nothing to buy fertilizer with stand on the same footing with the boy who has fertile soil and a rich father to back him. Again, why not have a "grandfather's club contest," all over 60 to enter? Give them a chance to see Washington. They will soon pass over the "Great Divide" into the border land. "Oh!" I hear you say, "their lives are almost spent, and they are not worth fooling with." Listen! Perhaps they were handicapped. Lack of capital; lack of ambition, hampered by richness, environment, and barren soil, they were not able even to flirt with success, let alone win her approval or favor. No grander, no greater, nor nobler sight could I behold than 88 gray-haired fathers, one from each county, taking their first and perhaps last trip to Washington, D. C., because they had raised the cheapest big yield of corn in their respective counties. What do you say, Brother Sandles? And we ought to offer a prize to the dear old grandmothers. God bless them! Let them raise a prize flock of chickens, or be a keeper of the tidiest and neatest home.

I am only a plain, seven-days-in-a-week farmer.

R. B. CARSON.

Amen to the above. But do not forget the dear old grandmothers while we have the grandfathers in mind.

Poultry Department

THE AJAX INCUBATOR; A CHEMICAL WHICH GIVES OFF OXYGEN WHEN BROUGHT IN CONTACT WITH WATER, ETC.

Mr. Root:—I read with great interest your note in regard to incubators, on page 18, of Special Notices in GLEANINGS. Exposing frauds based on pretended scientific discoveries which the common people do not understand, but think that, if it is "scientific," it must be all right, has always been a favorite work of mine, and I have exposed some notable ones, as I think your W. P. Root knows.

That the "Ajax vitalizer" has any good grounds for its claims I greatly doubt. I doubt the main assertion that eggs under a hen get more oxygen than those in an incubator. On general principles I should say that the opposite would be the case. But in regard to the tablets which give off oxygen when brought into contact with water, there are several substances which do this, the most notable being sodium peroxide. This, when fresh, gives off oxygen with such energy as to set fire to some combustibles; but I should not think it would be well adapted to the purpose in question.

Paterson, N. J., Sept. 20.

JOHN PHIN.

I did not mean to say there is no such substance; but in talking with those fairly well versed in chemistry they said they knew of none. Now, this apparatus for supplying oxygen to the incubator is supposed to throw a steady stream—just enough and no more to give the eggs vitality and to keep it up during the last two or three days of the hatch. I might explain to our readers that friend Phin has a lecture that he delivers in regard to the different methods of producing fire during all the ages past up to the present time. As a chemist he is well known in scientific circles. In our town of Medina we are using natural gas; and a little instrument costing only ten cents makes a light by rubbing a certain alloy over something like a file, somewhat like the old-fashioned lighting by means of flint and steel. The little ten-cent implement is kept close by the gas jet, and it saves both time and matches.

Later.—After the above was dictated the following came to hand:

I note what you say in regard to the Ajax vitalizer, which I have no doubt is as worthless as you believe; but there is a chemical made that liberates pure oxygen when brought in contact with water, just as carbide liberates acetylene gas. It is called "oxone," and is used to produce oxygen for the oxy-hydrogen light used in stereopticons and moving-picture machines. I know this because my firm sells it for that purpose, and I have so used it.

Louisville, Ky., Sept. 30.

W. C. FURNAS.

I have been hoping to get some good reports from this apparatus that has been so highly extolled in advertisements. The following, however, does not look very much that way, especially as it comes from such good authority.

In the April 15th issue of GLEANINGS you write up the "Ajax Oxygen Vitalizer." I wish to say I gave a thorough test on my Prairie State incubators, and they did not improve my hatch any; in fact, I

got better hatches without them. I gave them a thorough test, as I ran 35 machines; so you see I am in position to make a test.

Pleasant Valley, N. Y., Oct. 18, EDGAR BRIGGS.

COOKING FOOD FOR CHICKENS—ESPECIALLY THE GRAIN.

I very much enjoy reading your department in GLEANINGS, and find your poultry articles very practical and helpful. I have a way of economizing on cost of feed which has saved me a good deal of expense, so I will pass it along to you and your subscribers. My "secret" is to cook the wheat, which makes more than double the quantity when cooked. A quart of this cooked wheat will feed just as many hens as a quart of uncooked wheat, though of course it really was less than half a quart before cooking; and, besides, the hens seem to enjoy it better. I cook it in a wash-boiler on the kitchen stove when my wife is baking, so she uses the oven and I use the top of the stove, and it doesn't take any extra fuel and, besides, the hens seem to enjoy it better. I cook water to five quarts of wheat, and let it cook until dry. Sometimes to make it especially good I add meat scraps and red pepper, always a little salt. When I feed it I stir in some bran or alfalfa meal, and I give it to them in troughs or pans.

When the weather is as cool as it is now, I cook enough for three feeds at one time. It must not be kept till it sours. I use this only for the evening meal, making them work for their breakfast.

I keep thoroughbred White Leghorns exclusively, because I think they are the best layers in a warm climate, and are beautiful to look at out on the green grass. They are also beautiful in the show-room.

This fall at our Arizona State Fair I exhibited some of mine, and won several blue ribbons and the sweepstakes prize, a fine silver cup. Perhaps you would be interested in hearing of the record I made last year.

Starting Dec. 1 with 110 hens, I raised 95 pullets; and in August I sold some old hens, so the latter part of the year my flock numbered 150.

I sold 15,564 eggs. Of these 4249 went to the incubator trade for hatching, and the others were sold at prices ranging from 15 to 50 cts. per dozen. For all eggs sold during the year I received \$394.50 for hens, and fryers \$85.45—a total of \$479.95. Besides this we had eggs and poultry for home use. Of course the cost of feeding had to come out; yet even then it left me a nice profit.

Hens pay well here, but I believe that good hens well cared for are a profitable investment almost anywhere.

I hope you may live to see that hundred years—any way, a long time yet to continue your noble work of fighting the evil and encouraging the good.

Phoenix, Ariz., Dec. 2.

C. H. TRDD.

My good friend, I supposed our experiment stations had decided by careful experiments that it does not pay to cook the food for poultry or other farm animals. A few years ago, as you may remember, there was a great craze for cooked food for domestic stock, and cookers were on the market for cooking, steaming, etc. Now, from the result you have given in the way of dollars and cents, we can not very well dispute your theory. From one to two dollars' profit from each laying hen in the year is certainly very good business; but if I am correct you have gone considerably beyond the highest figure.

Temperance

WOMAN SUFFRAGE—WHAT IT IS DOING FOR CALIFORNIA.

Mr. A. I. Root:—I am sending you under separate cover a copy of my local paper which contains the result of an election just held in our city. The liquor business was put down in this city about 18 years ago, and they have been fighting to get in again ever since. A few years ago they succeeded in electing a board of city trustees that gave the hotels and drugstores a license, after the advisory vote of the people was given against such a policy. Two years ago the people put the same board of trustees out of office by a majority of 450 votes, which was telling them most emphatically that they had not kept faith with the voters.

The present election was called by initiative petition circulated by the liquor interests, who called themselves the temperance party. This is the first time the issue has been clearly defined, and a fair and square vote taken. Notice what we did to them. We give the women due credit for this wonderful victory.

Redlands, Cal., Oct. 1. P. C. CHADWICK.

We should be glad indeed to give the full account of the reform the women have brought about in Redlands (as given in the clipping), but it is too long. No wonder the brewers and wet politicians are fighting woman suffrage. See below.

REDLANDS, CAL.: ALMOST THREE TO ONE AGAINST INTEMPERANCE.

Dear Mr. Root:—The temperance people of Redlands won a great victory Sept. 30, deciding by a majority of almost three to one against hotel permits and a wholesale liquor-house. For years our city has stood for good citizenship, for public improvements and moral uplift. Redlands has about 12,000 inhabitants, and is primarily a city of homes. Here people can safely come to educate their children. There are splendid churches, excellent public schools, and a fine university. We hope other cities will be encouraged by our success in routing King Alcohol, and "go and do likewise."

Redlands, Cal., Oct. 7. M. G. VAN LOAN.

Well done, my good friend. When cities of 12,000 inhabitants abandon the liquor-traffic we are certainly making headway. It seems that the good women of Redlands *did* have something to do with this. May God be praised for such victories. I think every time I visit California I have enjoyed seeing Redlands grow. When Mrs. Root and I were there, there were orange trees planted along the streets outside of the walk, and visitors were permitted to pick the fruit—at least that was the case on some of the streets.

GOD'S KINGDOM AND SATAN'S KINGDOM.

The *American Advance* as well as the *American Issue* is giving us abundant evidence of the coming of God's kingdom. See the following from the *Advance*:

Chancellor David Starr Jordan, of Stanford University, says, "The future city will no more allow an open saloon than the present city allows an open

cesspool. Every community has the same right to destroy its saloons that it has to kill its rats."

As an evidence, also, that Satan is pushing things, we submit below another clipping from the *Advance*:

"If the fight with prohibition goes to the last ditch, the great cities will be found aligned against the rural districts in a final struggle to eliminate the liquor traffic," declared Col. Jacob Ruppert, of New York, President of the United States Brewers' Association, at their annual convention at Atlantic City.

The launching of a national propaganda to fight prohibition in every stronghold was one of the chief topics thoroughly considered.

E. A. Faust, chairman of the Crop Improvement Committee, said:

"Within the next decade it is possible that the beer sales of the United States will reach 100,000,000 barrels annually."

MORE THAN HALF OUR TERRITORY AND MORE THAN HALF OF OUR PEOPLE NOW ON "DRY GROUND."

Out of the middle of a letter received from Wayne B. Wheeler, Superintendent of the Anti-saloon League, I clip the following:

"Seventy per cent of the territory of the United States is now dry, and nine States are dry. Forty-six million people live in dry territory, and a nationwide fight is on."

"CAN YOU AFFORD IT?"

I hate drunkenness; but I do not hate the drunkard.

If any man should have our friendship it is the man who has failed to be a friend to himself.

The fact is, the victim of strong drink often has all the virtues—including high intelligence and a tender, sympathetic heart—and yet when the demon Drink clutches him, his will is paralyzed and Satan is in the saddle.

A few weeks ago I visited San Quentin prison and talked with a man in the "Death Row" who has since been hanged.

"It was drink—just drink," he told me. "I was crazy. I was jealous, and I shot her. Then I shot myself. She died quickly. I recovered to be sent here. Next week I die. She was a beautiful, honest, loving wife to me, but drink had destroyed my reason."

I said nothing—what could I say? But I realized that the slow, lingering death of a drunkard's wife is no more tragic than the quick taking-off by knife or pistol.

The worst about strong drink has never been told. It can not be told—it escapes the limitations of language.

But I think we err in despising the drunkard. Our hearts should go out to him in pity.

A part of his hallucination often is that he is not a drunkard. "I can quit any time," he says. But he who says that seldom quits until death stops his mouth with dust.

"Wine is a mocker, strong drink is raging; and whosoever is deceived thereby is not wise." So said Solomon, a thousand years before Christ.

And the drink problem is upon us to-day, just as terrible, just as tragic, as it was then.—ELBERT HUBBARD, in *The May Cosmopolitan Magazine*.